MASTER-/DIPLOMARBEIT

Alternate Reality

Living in Nature

Alternativer Realität

ausgeführt zum Zwecke der Erlangung
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Wien, am ____________________
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Abstract

Today we live in a world where living conditions are constantly and rapidly improving, technology is reaching places no one could ever imagine, medicine is finding solutions to all kinds of health problems, people around the world are connecting much easier and it seems that everything is or at least will be possible. But even though we've made all these great strides, it doesn't necessarily mean our lives are getting better. Easier maybe, but not necessarily better.

We have created a world in which we often trap ourselves, isolated from our roots, our beginnings and everything that surrounds us, focused on our daily problems as we often forget to simply live. As we move forward, it is becoming clear that the ways of living, we humans created create problems that we have ignored for a long time. Our environment is becoming more and more polluted, new diseases are constantly appearing and our resources are slowly running out. We face great challenges, but if we take the right path, we still might have a bright future.

I've always imagined what it would be like if we took nature back into our lives, lived side by side like we once did. Perhaps we should slow down or step back and use the knowledge and innovations we have to try to reconnect with nature, as I believe the roots of many problems in the world today may begin there. Maybe we should let nature take the lead sometimes.

In this project I'm putting climate change in the first plan. I'm trying to look for ways people could possibly live if we had the perfect conditions. It's about a living community in an alternative reality in which man and nature depend on each other. It is located on a huge tree in a dense forest. The project is just one example of how our imagination can bring us closer to nature, maybe in a perfect world or maybe one day in our own future.

Abstract

Heute leben wir in einer Welt, in der sich die Lebensbedingungen ständig und schnell verbessern, die Technologie an Orte vordringt, die sich niemand vorstellen kann, die Medizin Lösungen für alle Arten von Gesundheitsproblemen findet, Menschen auf der ganzen Welt sich viel einfacher verbinden und es scheint, dass alles möglich ist. Aber obwohl wir all diese großartigen Fortschritte gemacht haben, bedeutet das nicht unbedingt, dass unser Leben besser wird. Einfacher vielleicht, aber nicht unbedingt besser.

Wir haben eine Welt geschaffen, in der wir uns oft selbst gefangen halten, isoliert von unseren Wurzeln, unseren Anfängen und allem, was uns umgibt, konzentriert auf unsere täglichen Probleme, da wir oft vergessen, einfach zu leben. Auf unserem Weg in die Zukunft wird deutlich, dass die von uns Menschen geschaffenen Lebensweisen Probleme verursachen, die wir lange Zeit ignoriert haben. Unsere Umwelt wird immer mehr verschmutzt, ständig treten neue Krankheiten auf und unsere Ressourcen gehen langsam zur Neige. Wir stehen vor großen Herausforderungen, aber wenn wir den richtigen Weg einschlagen, haben wir doch vielleicht eine strahlende Zukunft.

Ich habe mir immer vorgestellt, wie es wäre, wenn wir die Natur zurück in unser Leben nähmen, Seite an Seite leben würden wie früher. Vielleicht sollten wir langsamer werden oder einen Schritt zurücktreten und das Wissen und die Innovationen nutzen, die wir haben, um zu versuchen, uns wieder mit der Natur zu verbinden, denn ich glaube, dass die Wurzeln vieler Probleme in der heutigen Welt dort beginnen könnten. Vielleicht sollten wir der Natur manchmal die Führung überlassen.

In diesem Projekt setze ich den Klimawandel in den ersten Plan, ich versuche nach Möglichkeiten zu suchen, wie Menschen möglicherweise leben könnten, wenn wir die perfekten Bedingungen hätten. Es geht um eine lebendige Gemeinschaft in einer alternativen Realität, in der Mensch und Natur aufeinander angewiesen sind. Es liegt auf einem riesigen Baum in einem dichten Wald. Das Projekt ist nur ein Beispiel dafür, wie unsere Vorstellungskraft, uns der Natur näher bringen kann, vielleicht in einer perfekten Welt oder vielleicht eines Tages in unserer eigenen Zukunft.

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1. Introduction

The Idea for the project came from a competition I saw on-line, where, in some alternate reality, a solution would be presented to some of the biggest problems the world is facing today, such as: racial inequality, overpopulation, climate change, etc. I decided to focus on climate change and the problems that are connected with it, because nature brings so many advantages in our lives that we are mostly lacking in our society.

The focus point was to create an environment where people with thrive together with nature, which would help the world develop in an more ecological and sustainable place, because in order to solve the climate change problem, one way or another, we will have to let nature back into our lives. We as an architects I believe can play a big role in that process, as we bring nature into our future homes. For the project I took a more artistic and futuristic approach, as something that could maybe be more imaginable one day in the future, if we let nature thrive as we follow along.

This was such an amazing topic for me, because I have always imagined how would it be to live in nature again, far from the everyday city life. I began researching and playing around with ideas of people living in nature again. One of these ideas was using trees as a home, or more specifically, build our homes on the trees. I am sure that people would appreciate nature, and live in general, much more, if their home was a living organism, such as a huge tree in this case, on which we people are building their "nests". I imagined that if trees would have the conditions to grow much bigger, we could build whole communities there, in a way like some animals. A tree that could be big enough so there will be enough space for peoples everyday needs, like a home, a workplace, school at least to some extend.


Fig. 1.1 - Tree Dwellers

2. Situational Analysis

2.1. Problems Analysis

By researching the problems that our world and our society are facing today, I came to the conclusion that a lot of them are directly or indirectly interconnected. Influencing one of these factors can automatically effect some other factors, which means that if we work on improving some of these factors, chances are, positive changes will occur in some other areas as well. The climate change is directly affected by our lifestyle. These climatic changes are having various impacts on the ecosystem and ecology. Climate change is causing global temperatures to increase, resulting in more extreme weather events and changes in the environment. Rising sea levels due to melting ice caps is also a major consequence of climate change, threatening coastal cities and ecosystems around the world. Due to these changes, a number of species of plants and animals have gone extinct. As the population grows, forests are being converted into agricultural land, cities expand and take over, and as a result, other spices are losing living space, start decreasing in numbers and going endangered.

To address this issue, it is essential to reduce our consumption of energy and reduce our production of greenhouse gases. Additionally, it is important to invest in renewable energy sources and sustainable practices to reduce our reliance on fossil fuels. One way to combat climate change is to turn to nature. By restoring wetlands, planting trees, and preserving natural ecosystems, we can help to sequester carbon dioxide and reduce emissions. Planting trees and other vegetation can also help to reduce temperatures in urban and rural areas, reducing the impact of heat waves. Additionally, restoring and protecting ecosystems can ensure that they are able to absorb and store carbon dioxide from the atmosphere. These natural solutions can help to reduce the effects of climate change and build a more sustainable future.

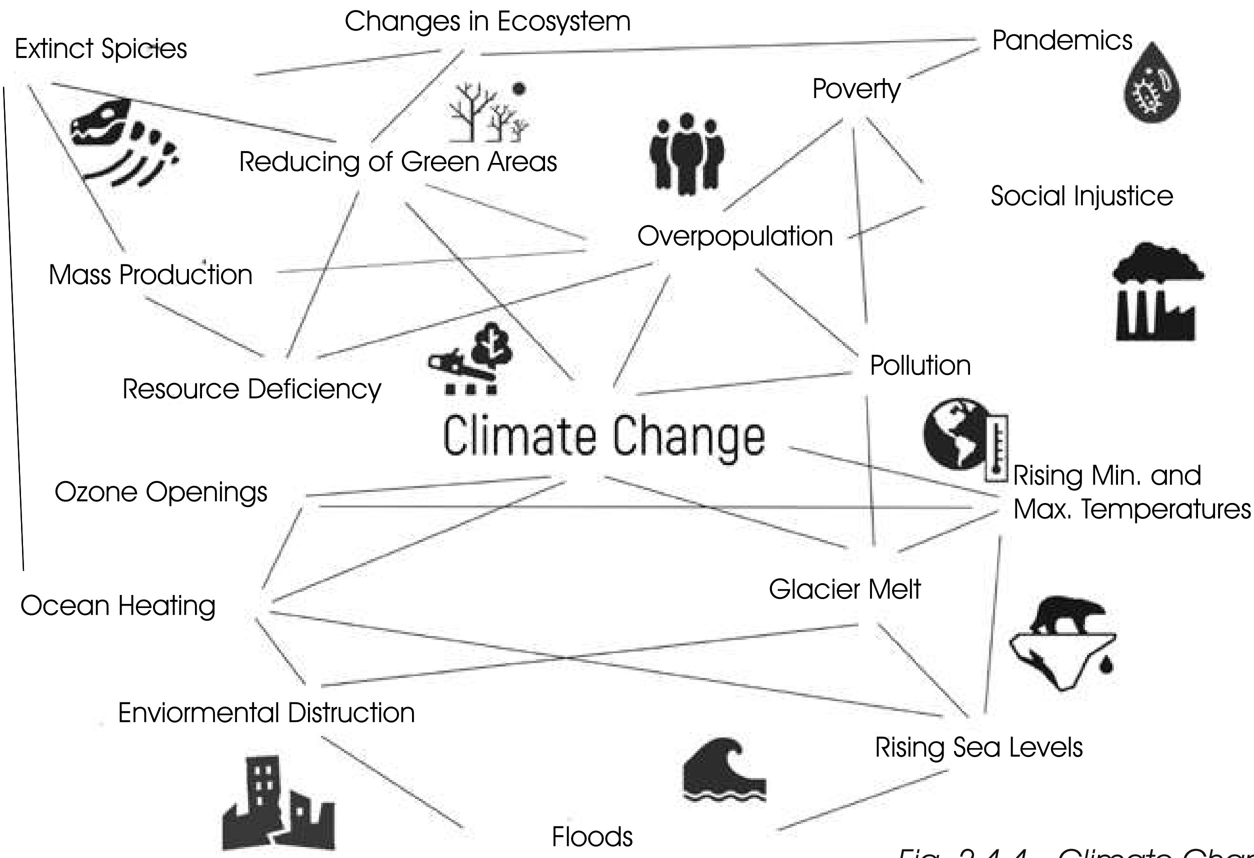


Fig. 2.1.1 - Climate Change

2.2. Benefit of Green Areas

Green spaces have a wide range of benefits for people and the environment. They provide essential habitat for wildlife and help to preserve biodiversity. They also help to reduce air and noise pollution, absorb carbon dioxide and other pollutants, and reduce the urban heat island effect. Additionally, green spaces help to reduce flooding by absorbing and storing rainwater. On a human level, green spaces provide places for relaxation and recreation. They also provide a valuable resource for physical activity, as well as mental health benefits. Research has shown that green spaces can improve physical and mental well-being, reduce stress, and improve quality of life. In addition, green spaces can help to increase property values, enhance community pride, and promote social inclusion. In short, green spaces are essential for people and the environment. They provide countless benefits, both tangible and intangible, which help to improve the quality of life for individuals, as well as society as a whole.

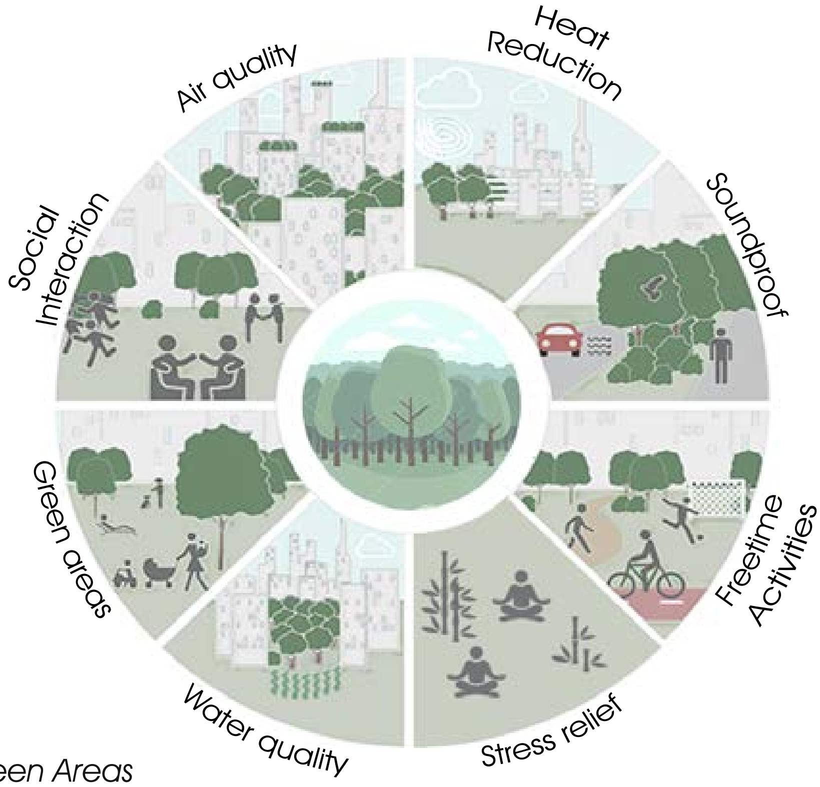
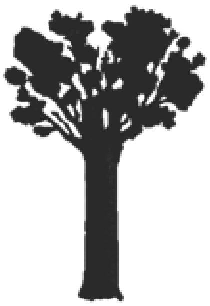


Fig. 2.2.1 - Green Areas

I chose a tree as a base for my architectural project because it provides an organic and sustainable form to work with. Trees are strong, versatile structures that can withstand many different weather conditions and provide an ideal base for a variety of architectural projects. Their thick core and branches can provide support for building on top of them. Trees also provide an aesthetically pleasing backdrop for a project, and can be used to create unique and interesting shapes and patterns. Additionally, they are a renewable resource, so they provide a sustainable and eco-friendly option for an architectural project. Since they have many advantages and bring varieties of benefits to the environment, why don't we build with the trees instead of replacing them with non-organic buildings?

2.3. Tree Selection

Wanting to build a whole community on a tree, I needed a huge tree which can provide enough support, as well as thick and long branches to enable different levels and movement across the project. I compared the tallest and thickest trees that we currently have on our planet, and created a hybrid tree from trees that have the characteristics I need for my project.



Giant Kauri
- Lifespan: 1000-2000 y.
- Growthrate: 30-40 cm y.
- Height: up to 50 m
- Diametar: 5-7 m

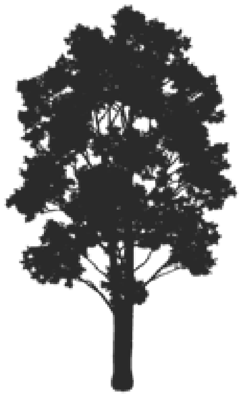
Western Red Cedar
- Lifespan: over 1000 y.
- Growthrate: 5cm y.
- Height: 65-70 m
- Diametar: 3-7 m

Rainbow Eucalyptus
- Lifespan: 150 y.
- Growthrate: 100-150 cm y.
- Height: 60 - 75 m
- Diametar: 2.5 m

Sumaumeira (Kapok Tree)
- Lifespan: 300 y.
- Growthrate: 300 cm y.
- Height: up to 70 m
- Diametar: 3 m

Giant Sequoia
- Lifespan: up to 3000 y.
- Growthrate: 30-60 cm y.
- Height: 50-100 m
- Diametar: 6-8 m

Eucalyptus Globulus
- Lifespan: 1000-2000 y.
- Growthrate: 250 cm y.
- Height: 90-100 m
- Diametar: 2 m



Eucalyptus Regnans
- Lifespan: 100-500 y.
- Growthrate: 100-200 cm y.
- Height: 70-114 m
- Diametar: 2-4 m

Coast Douglas-fir
- Lifespan: 500-1000 y.
- Growthrate: 30-60 cm y.
- Height: 100-120 m
- Diametar: 2-4 m

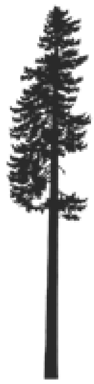


Fig. 2.3.1 - Tallest Trees

Giant Sequoia

Characteristics:

- *Lifespan: up to 3000 y.*
- *Height: 50-100 m*
- *Growthrate: 30-60 cm y.*
- *Diametar: 6-8 m*

Fig. 2.3.2 - Giant Sequoia

Fig. 2.3.3 - Giant Sequoia Trunk

The first tree I choose is The Giant Sequoia, because of its big diameter and long lifespan. The Giant Sequoia is also known as the Sierra redwood and it is one of the most majestic and inspiring trees in the world. Found only in the Sierra Nevada mountain range of California, these trees can reach heights of over 300 feet and live for up to 3,000 years. The oldest living giant sequoia, known as the General Sherman Tree, is over 2,500 years old and is still growing.

The Giant Sequoia is a hardy tree, with thick bark that can reach up to 10 centimeters thick, making it resistant to both fire and insect damage. Its deep red color combined with its towering height makes it an impressive sight. Its foliage is a deep green throughout the year, and each tree can be home to a wide variety of birds, mammals, and other animals. Giant Sequoias can grow to be up to 8m diameter. The largest Giant Sequoia ever measured was the General Sherman Tree, which had a diameter of 11m at its base. The tree is also an important part of the state's ecology, helping to stabilize the soil, improve air quality, and provide habitat for many species of wildlife.

Sierra Nevadas cool summers, abundant sunshine, and deep, well-drained soils provide the perfect environment for these trees to reach exceptional heights. Additionally, the lack of strong winds and heavy snowfall in the area enable the trees to grow uninterrupted.

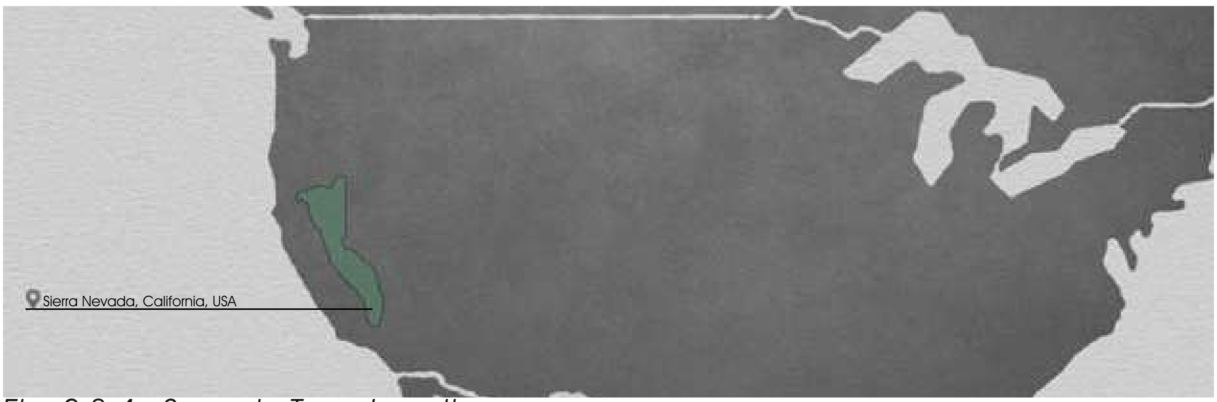


Fig. 2.3.4 - Sequoia Trees Location

Kapok Tree

Characteristics:

- *Lifespan: up to 300 y.*
- *Height: up to 70 m*
- *Growthrate: 300 cm y.*
- *Diametar: 2 m*

Sumaumeira, also known as Kapok tree, is an incredibly distinctive species of tree native to tropical and subtropical regions of South and Central America. This majestic tree can reach heights of up to 70m and has a unique and impressive appearance. Its trunk is covered in a thick layer of reddish-brown bark, and its large, bright green leaves are arranged in a feathery pattern. Kapok tree roots are quite shallow, spreading out near the surface of the soil. The roots are fibrous and widespread, forming a strong and shallow network. They are adapted to withstand strong winds and water shortages. The roots are also capable of fixing nitrogen, which helps to improve soil fertility in the area.

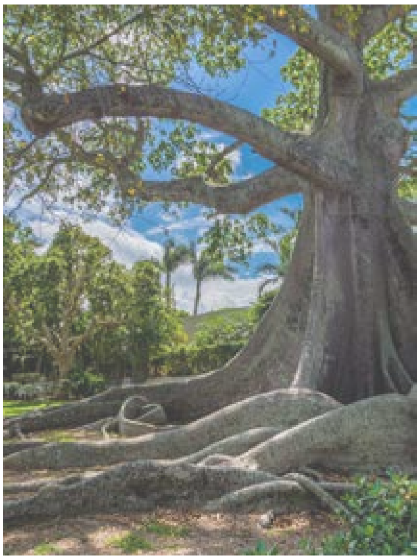


Fig. 2.3.5 - Kapok Tree

The Sumaumeira tree has long been admired by the people of South and Central America. Its wood is extremely durable and is often used to construct furniture and other items. The flowers of the tree are also edible and are sometimes used to make a sweet tea-like beverage. In addition, the fruit of the tree is an important source of food, with the seeds being dried and ground into a flour for baking.

Fig. 2.3.6 - Kapok Tree

The Sumaumeira tree is also a popular ornamental tree due to its striking appearance. It is often planted in parks and gardens, where it provides a lush, tropical atmosphere. The tree is also known for its medicinal properties, with the bark being used to treat a variety of ailments.

Fig. 2.3.7 - Kapok Tree Trunk

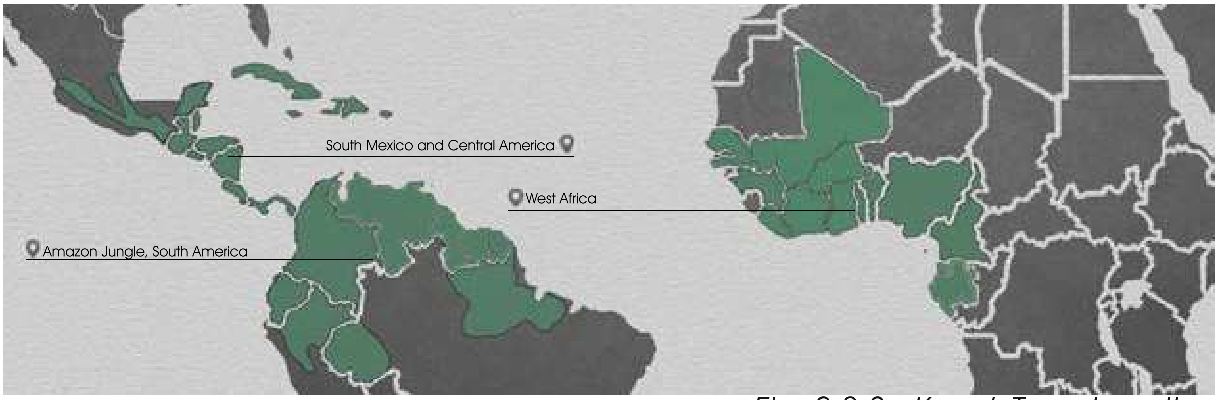


Fig. 2.3.8 - Kapok Trees Location

By merging these two trees in the alternate reality, I designed a tree that will combine the advantages of the Kapok Tree and the Giant Sequoia and by providing it the perfect conditions, its potential can be even multiplied. Big roots, trunks with big diameters and enormous heights provide an incredible amount of support for the living units. Trees are some of the most remarkable and majestic organisms on the planet. They are able to adapt to a wide variety of environmental conditions, but if trees were given perfect living conditions, they could reach their full potential. In ideal surroundings, trees could grow to be incredibly tall and strong, with roots that penetrate deep into the soil and branches that reach high into the sky. They could draw more nutrients from the soil and produce lush, vibrant foliage. They could also store more carbon dioxide and oxygen, helping to clean the air and reduce the effects of global warming.

2.4. Location Analysis

After a deep research, I choose a location in nature where this tree would find a home, based on different criteria like temperature, humidity, soil quality, wind speed, sunlight, water. The location is the Mount Sierra Nevada, the same place where the biggest trees we have on the Planet currently are thriving. The Sierra Nevada Mountains are a mountain range located in California, the western United States. The range stretches for about 644 km from north to south and covers an area of about 57,000 sq km. It is a home to many plant and animal species, including the giant sequoia tree. It is a perfect place for trees to reach incredible heights, and in a place where climate change does not exist, trees could possibly grow even bigger.

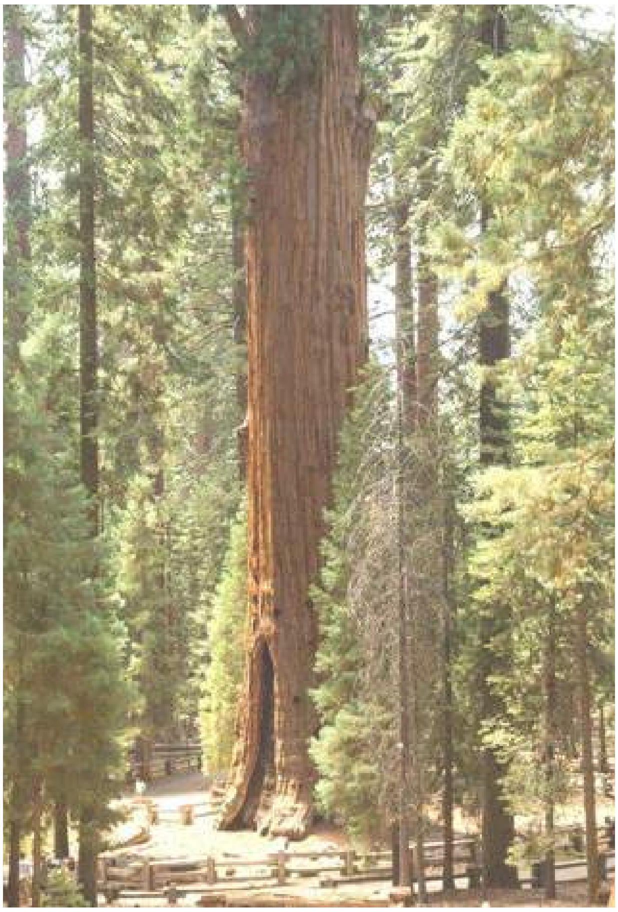


Fig. 2.4.1 - Sequoia National Park

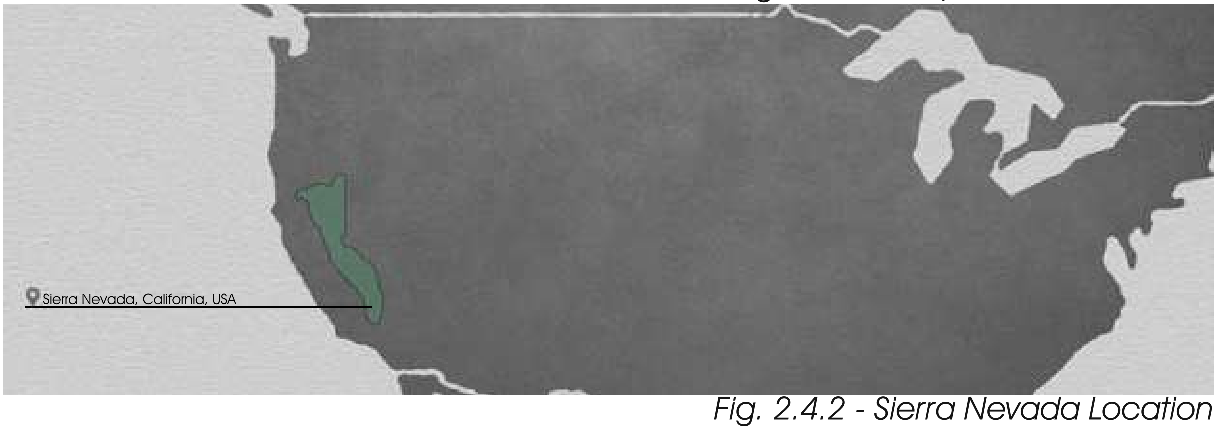


Fig. 2.4.2 - Sierra Nevada Location

The Sequoia park is an area of 1,635 km2 in the Sierra Nevada mountain range. It was established in 1890 to protect 404,064 acres of forested mountainous terrain. The park is home to the largest trees on Earth, the giant sequoia. The average temperature in the Sequoia National Park is between -4°C in January to 19°C in July, which makes a perfect living condition for tall trees like these. The perfect temperature range for trees allows them to photosynthesize efficiently and helps them to grow at optimal rates. The average humidity in the Sierra Nevada Mountains is around 35%. Humidity is an important factor for the health of trees, as it affects the amount of water available to the tree roots. High humidity can also lead to the growth of mold and mildew on the leaves, which can cause damage to the tree. Big trees like Sequoias are able to survive the lower temperatures in the Sierra Nevada Mountains due to their unique adaptation strategies. Their thick bark and deep roots are able to insulate them from the cold, while their needles are able to retain moisture in the winter months. They are also able to store energy in the form of carbohydrates to use during periods of cold temperatures.

Fig. 2.4.3 - Sequoia National Park Trees

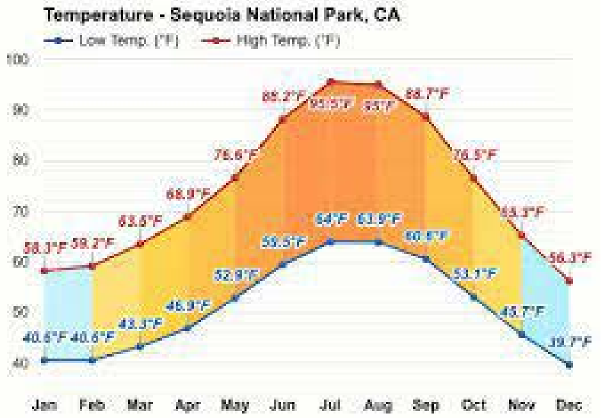


Fig. 2.4.4 - Temerature Sequoia National Park

Fig. 2.4.5 - Mount Sierra Nevada

The amount of sunlight in the Mountains varies depending on the season and elevation. During the summer months, the mountains receive plenty of sunshine, while in the winter months the amount of sunshine is reduced. The higher elevations can also experience more intense sunlight due to the thinner atmosphere. During a day the national park gets and average from 10-14 daylight hours, depending on the season.

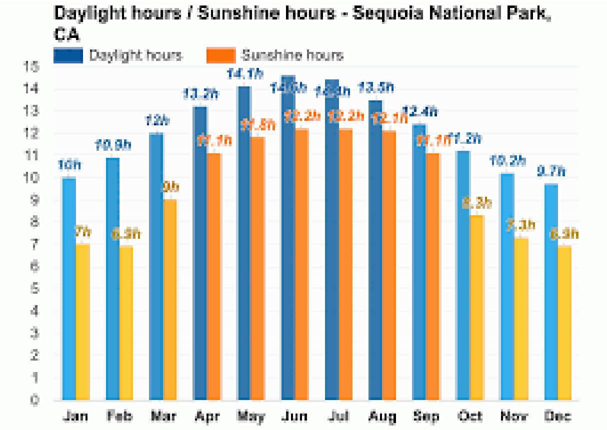


Fig. 2.4.6 - Daylight Sequoia National Park

The Mountains also receive an abundance of water from snow-melt and runoff from streams, rivers, and lakes. In some areas, underground aquifers provide additional water sources. This water is essential for sustaining the forests and ecosystems of the range, as well as for providing drinking water for the local communities.

Snow plays a role in the winter climate in the Sierra Nevada Mountains. In the higher elevations of the park, at the peak of the winter season, the mountains may receive up to 1 meter of snow. Snowfall can occur between October and May, with the heaviest snowfall occurring between December and March. The giant sequoias and the surrounding redwood trees, need a lot of water because of their size and a lot of it comes from the snow. Because of the warming temperatures, sometimes they are in lack of water, and then they drop leaves and branches as a way of saving up water. The snow also has an important role in the park's ecology. During the winter months, the snow pack provides much-needed moisture to the park's soils, helping to replenish the water resources in the area.

The soil quality in the Sierra Nevada Mountains varies greatly depending on the area and elevation. Generally, the soil is well-drained and high in organic matter, with a pH range of 5.5-7.5. Soil texture is generally loamy, with a mix of sand, silt, and clay. A larger pH range generally indicates a wider range of conditions that the soil can support, including a greater variety of plants, microorganisms, and other life forms. A soil with a higher pH range can also be more resistant to disease, as it is less likely to become overly acidic or overly alkaline.

Fig. 2.4.7 - Sequoia National Pak Scenary

2.5. The Eco System in the Alternate Reality

In the alternate reality this region has developed a bit differently. In over thousands of years, this forest between the mountains, protected from the wind and outside influences has developed its own ecosystem. The trees have all of the right conditions and freedom to thrive and grow over 300 meters in height, with diameters bigger then 20m. The big trees, along with the wildlife that lives on them, increases the humidity and brings it in the higher air layers, warm up the temperatures and slow down the wind even more, by providing shade and acting as a windbreak. The temperature rises by 2-3°C and humidity average rises to around 50%. The extra humidity and warmth can also help the trees at lower elevations to thrive, making soil and air quality even better. The snow around the region is a regular sight in the winter, benefiting the surrounding lakes and rivers, but in the national park region, because of the higher temperature, the snow melts down faster. The trees which are now bigger, need even more water, but the snow isn't so necessary anymore, as a lot of small water channels pass through the forest and create water ponds. Extra water is being absorbed in the thick bark of the trees, if it's necessary during dry periods. The trees don't need to drop out their leaves and branches so often, so they thrive and grow in every direction. With thick and long roots, they are able to extract water from deep in the soil. The trees also gets packed with a chemical called tannin, which is a adaptation technique coming from the sequoia trees, and that is really resisting to rot, which helps these trees thrive for thousands of years. The bark is also fire resistant, which helps them survive fires. These two characteristics make the material a great building material. The trees bring more oxygen and more materials through their roots to the soil, while the leaves and branches trap and retain moisture and nutrients. This improves the soil quality and enables the soil to store more carbon. Trees also help to reduce erosion, protect soil from compaction, and stabilize the soil against strong winds and rainfall.

Fig. 2.5.1 - Alternate Reality Illustration

2.6. Wind Analysis

The average wind speed in the Sierra Nevada mountain range varies depending on the elevation. At the lower elevations in the national park, the wind intensity is moving in the range of 6-11 km/h, which according to the Beaufort Wind Scale is light breeze which barely moves the leaves of the trees. Because of the surrounding mountains and the variety of the dense vegetation, the wind on the ground, at the lower elevations is considerately weak and doesn't create any problems for the surrounding wildlife. The average wind speed at 100m is 11.5 km/h, at 200m is 13.2 km/h, at 300m is 14.8 km/h and as we go higher the wind speed is accordingly getting bigger.

This area is surrounded with a lot of mountains and mountain tops with a height of over 4000m. These high mountains and hills block and slow the wind as it moves over them. Additionally, the area is also full of high trees and all kind of different vegetation, which also lowers the wind impact. Trees act as windbreaks, blocking the wind and creating turbulence that can reduce wind speed. This is why winds in Sierra Nevada have low intensity, especially in the summer.

In the alternate reality, the trees that grow here are enormous, even three times bigger that the giant sequoias we know today. This is because of the lack of human impact, healthy ecosystems and healthy planet. The climate here is much more stable, with not many outside disturbances like we have on our planet today. Extreme weather conditions are almost unlikely.

In the region of the Sequoia National Park, the enormous trees have a huge impact on the environment. They help to improve the quality of the soil by providing essential nutrients and organic matter through their leaf litter, they create enough shades in the summer heat and enough isolation from the winters cold air. All of this allows the vegetation to thrive and evolve, making the area much more dense.

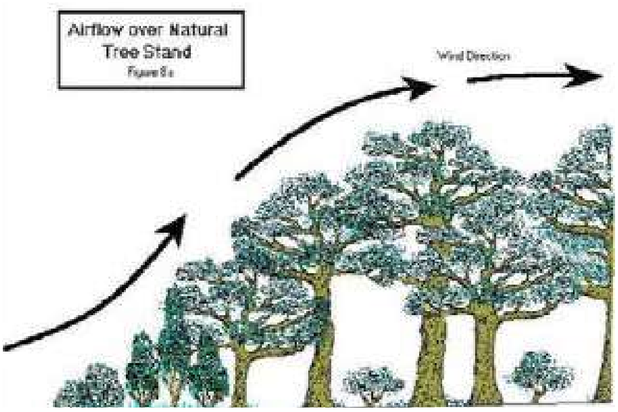


Fig. 2.6.1 - Natural air flow

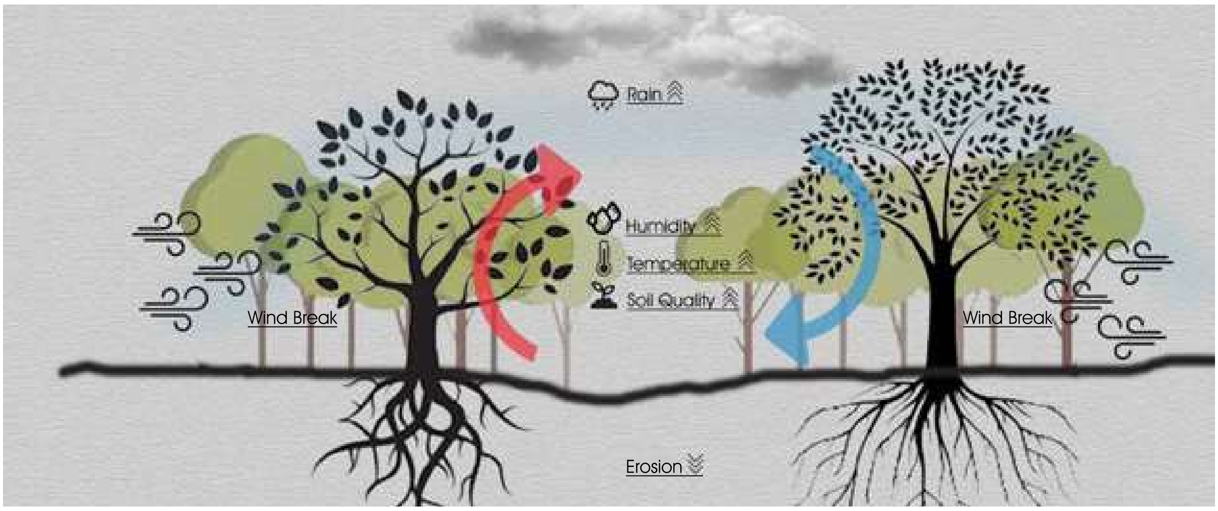


Fig. 2.6.2 - Wind Blockage

Rain is here more regular, and humidity rises as the presence of vegetation can lead to the release of water vapor into the air through transpiration. Humidity affects the temperature by decreasing the rate at which the air can cool. When the air is humid, it is filled with more water molecules, which trap the heat and keep the air from cooling as quickly as it would in drier conditions. So in winters warm air is kept, making the temperatures in this area higher.

The humidity, the warmth and the dense vegetation, have a huge impact on the wind as well. When there is more water evaporation, there is more water vapor in the atmosphere, which acts as a barrier to the movement of air. This means that the air has less energy and lower wind speeds. The humidity prevents the air from rising, which is necessary for the formation of wind. When the temperature increases, the air molecules have more energy and move faster. This creates a decrease in the density of the air, which results in less air pressure. With less air pressure, the air is less able to produce wind, resulting in lower wind speeds. As for the density and size of the vegetation, it slows the wind by acting as windbreak, blocking the wind and creating turbulence. Managing air pollution can help reduce the amount of turbulence in the air and slow down wind speeds.

Here the wind speed is significantly low as the ecosystem keeps the wind forces outside of the forest. The average wind speed on the ground is 2.2 km/h. At 100m height it rises to 3.0 km/h, at 200m it's 4.6 km/h. These speeds are all into the Light Air group according to the Beaufort Wind Scale. At 300m it finally enters the light group as it rises to 6.5 km/h.

Description	Mean Wind Speed	Appearance of Wind Effects		
		On a Tree	On Land	
Calm	<1 knot <1 km/h	Still	Smoke rises vertically	
Light Air	1 – 3 knots 1 – 5 km/h		Smoke drifts, wind vanes are still	
Light	4 – 6 knots 6 – 11 km/h	Leaves rustle	Wind felt on face, vanes begin to move	
Gentle	7 – 10 knots 12 – 19 km/h	Leaves and small twigs move	Flags flap	
Moderate	11 – 16 knots 20 – 28 km/h	Small branches move	Dust and loose paper lifted	
Fresh	17 – 21 knots 29 – 38 km/h	Small trees in leaf begin to sway	Flags fully extended	
Strong	22 – 27 knots 38 – 49 km/h	Larger branches shake	Whistling in wires, umbrellas become difficult to use	

Fig. 2.6.3 - Wind Speed Scale

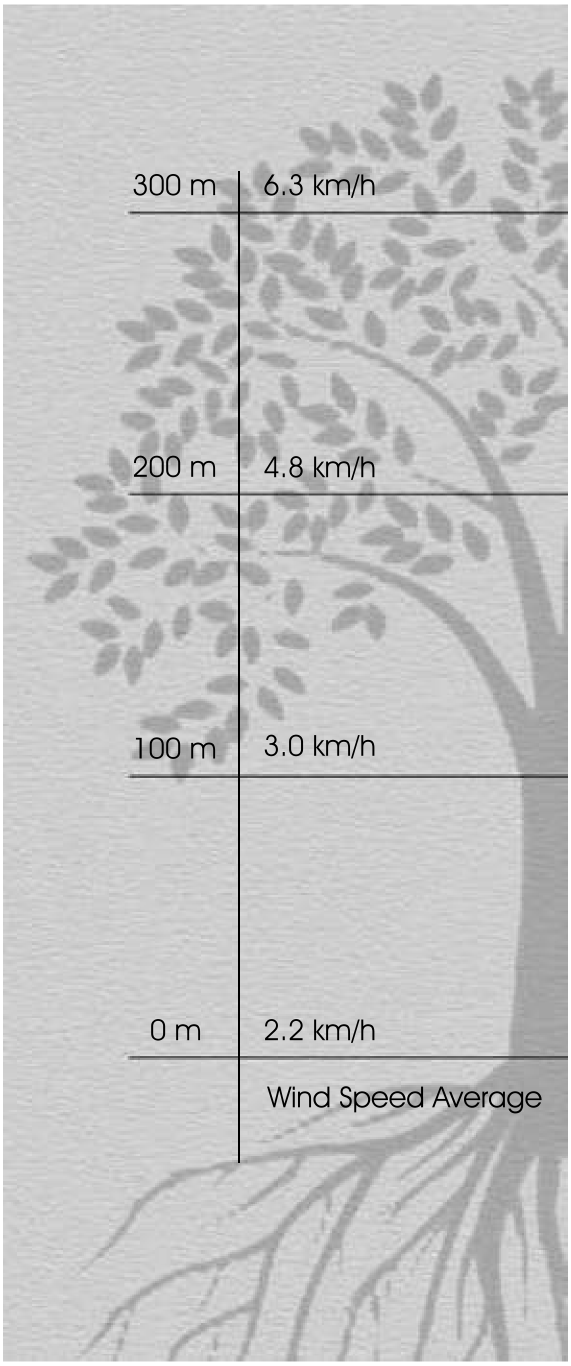


Fig. 2.6.4 - Wind in the Alternate Reality

3. Objectives

The objective of this project is first of all to bring more awareness to people, to give them an idea of a better future, an imagination that has no limits, hopefully motivating them in a way to appreciate and care more about the planet and the problem of global warming.

It is an Idea of expending connection between people and nature, reconnecting thriving together in the world. The goal is to create a sustainable, people-friendly environment that is connected with and respects nature. The project seeks to explore how people can live together in harmony with nature, and will focus on the potential of renewable energy to reduce our impact on the planet.

The idea is, in an alternate reality where trees have the perfect conditions to thrive, to create a small community on a huge tree, living areas with a few additional functions. The buildings are living apartments attached to the tree and connected by terraces and bridges. The tree will provide the whole support of the buildings with a help of its huge branches. People of all ages would be able to enjoy the beauty of nature in their own homes.

I believe we have to put more focus on the climate change as a worlds problem, as it is affecting every aspect of our lives. Even fictional and unrealistic solutions can spark an idea and inspire people to come up with new and sustainable solutions. By tackling some ideas about renewable energy and carbon storage I also hope to raise a discussion about new and more sustainable ways of building and actually living.

4. Methodology

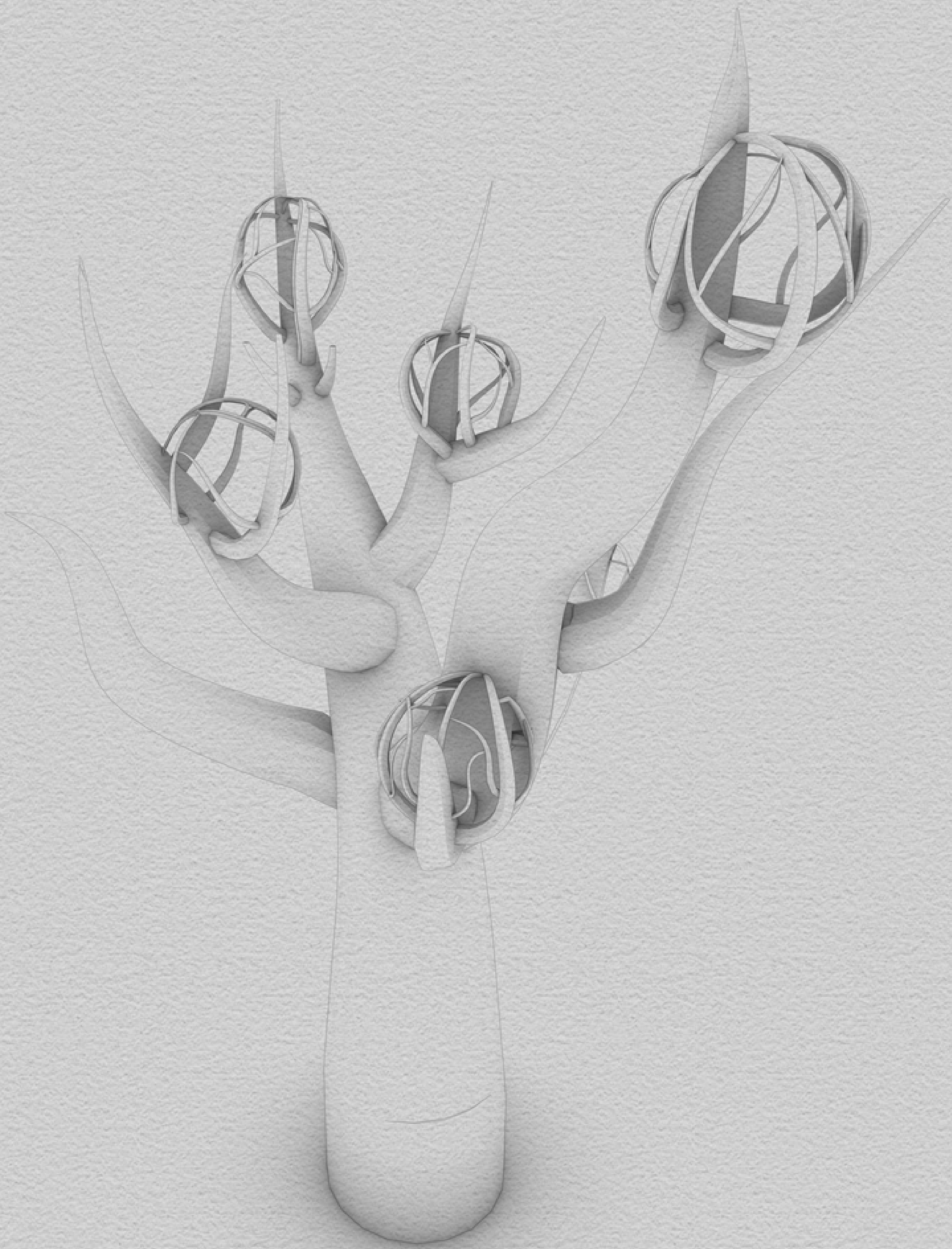


Fig. 4.0.1 - Tree Illustration

4.1 Concept

After a lot of researching, I started to collect ideas about how the alternate reality could look like. So I was sketching and modeling a different shape, trying to come up with something that would enable me to develop a community of people. I was looking for the form that will enable people to use the trees as a place for their homes.

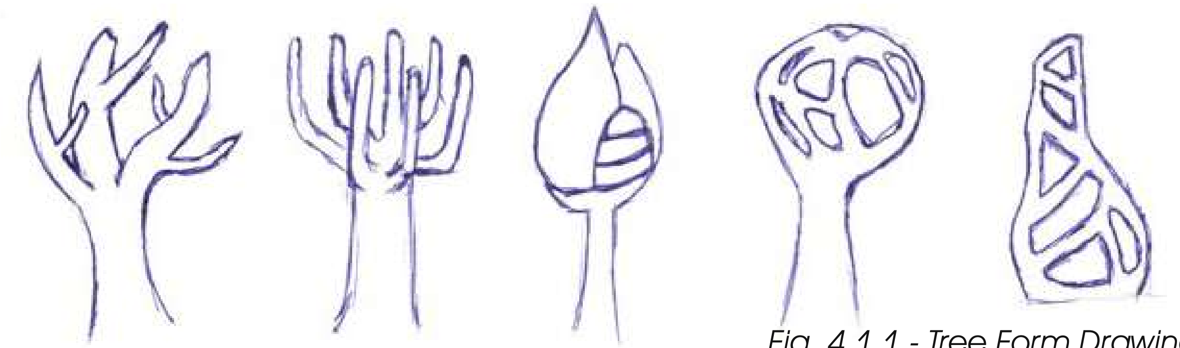


Fig. 4.1.1 - Tree Form Drawings

Plants grow in a thousand different ways, but trees mostly grow similarly, starting with a trunk, and then developing branches over time. I wanted to make it a living organism, so instead of creating some entirely new and different forms (which would also be a very interesting approach), I decided to just take the tree as we know it today, and just modify it by the imagination and the inspiration I got from plants.

The form that I chose, allows me to use the tree trunk as a support and the by banding the branches to create a "nest" for the people. It also allowed me to create multiple areas "hot spots" that I would later connect.

Fig. 4.1.2 - "Nest" Form

Fig. 4.1.3 - Shape Models Illustration

4.2 Tree Characteristics

The tree in this project is a hybrid from the Giant Sequoia tree and the Kapok tree, and it reaches a height of roughly 300m. The first 100 meters is just the trunk of the tree which elevates the living areas in-between 100m and 250m height. Their trunks are thick and tall, ending with roots that go deep in the ground, and help prevent erosion. Because of its size, it is able to create a lot of energy through photosynthesis, and a big amount of minerals and energy is going to the soil, improving it's quality.

The tree contains combined characteristics from the Giant Sequoia and the Kapok tree. Its lifespan is over 5000 years and the diameter of the truck can get up to 30-40 m. The growth rate is 100 cm per year, until the tree reaches it's maturity, which comes around 100 years of life. Then the trees growth then slows down to 20-40 cm a year, which enables a long growth and reaching extraordinary heights. The branches are more similar to the Kapok Tree, expanding in all directions, thick and long, able to carry big loads.

The bark of the tree comes from the Giant Sequoia, and it is extremely thick, going up to 60cm thickness. It is also extremely fire-resistant due to its thick, shaggy texture. If fire catches the bottom of the tree, it is difficult for the fire to move up as the thick bark prevents it, and the branches and leaves grow only above 100m of height, which makes the whole tree quite resistant to fire. The bark is also able to resist wind damage, making it an excellent choice for windbreaks or as an ornamental tree. It is resistant also to insect attack, making it a great choice for outdoor structures and landscaping. The bark is also very durable and resistant to rot and decay, making it be able to withstand flooding or long-term exposure to moisture. The bark insulates the tree, helping to protect it from extreme temperatures. As the tree grows, the possibilities to extend the community exists.


Fig. 4.2.1 - Giant Sequoia Trunks


Fig. 4.2.2 - Kapok Branches Span

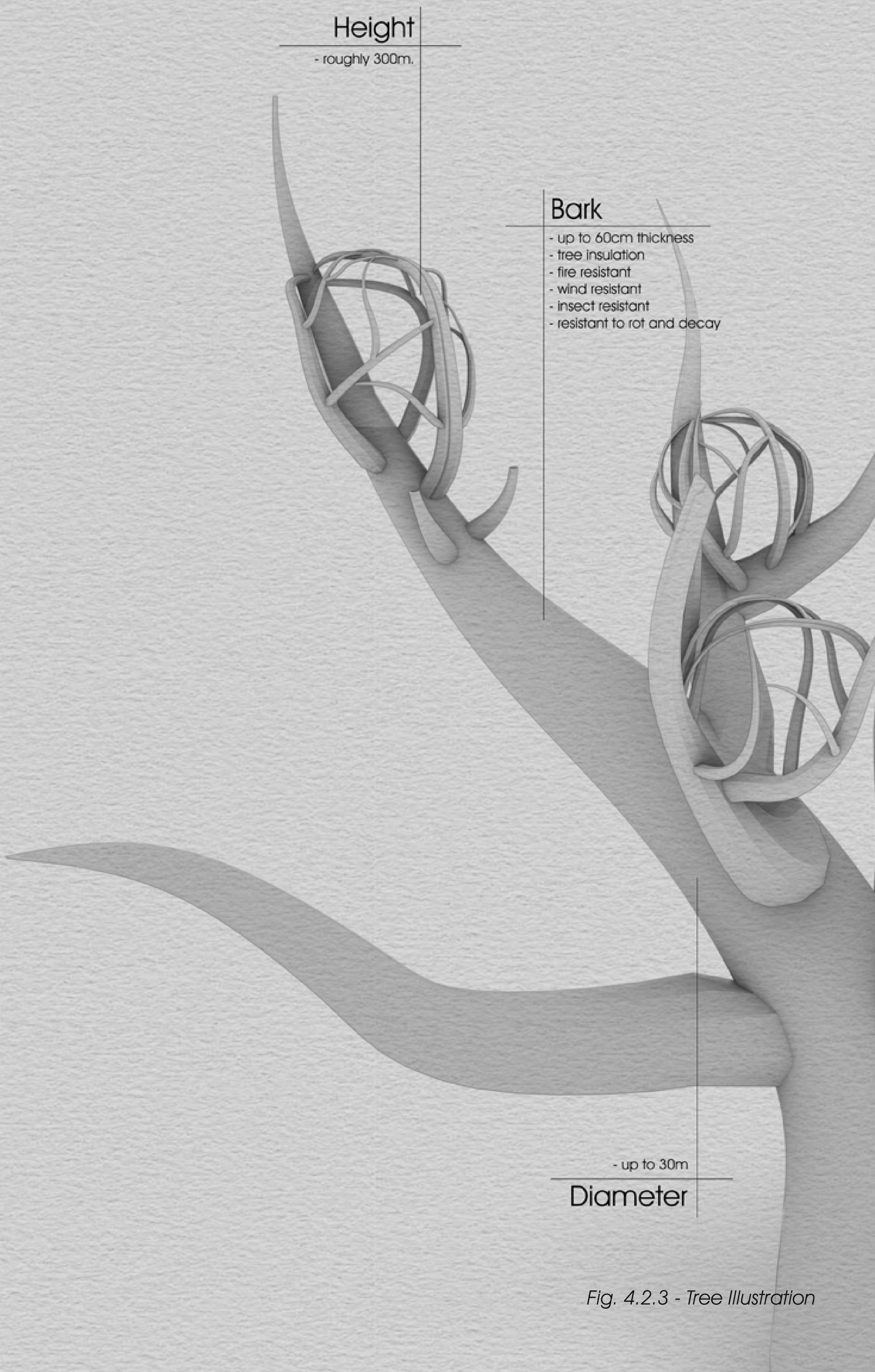
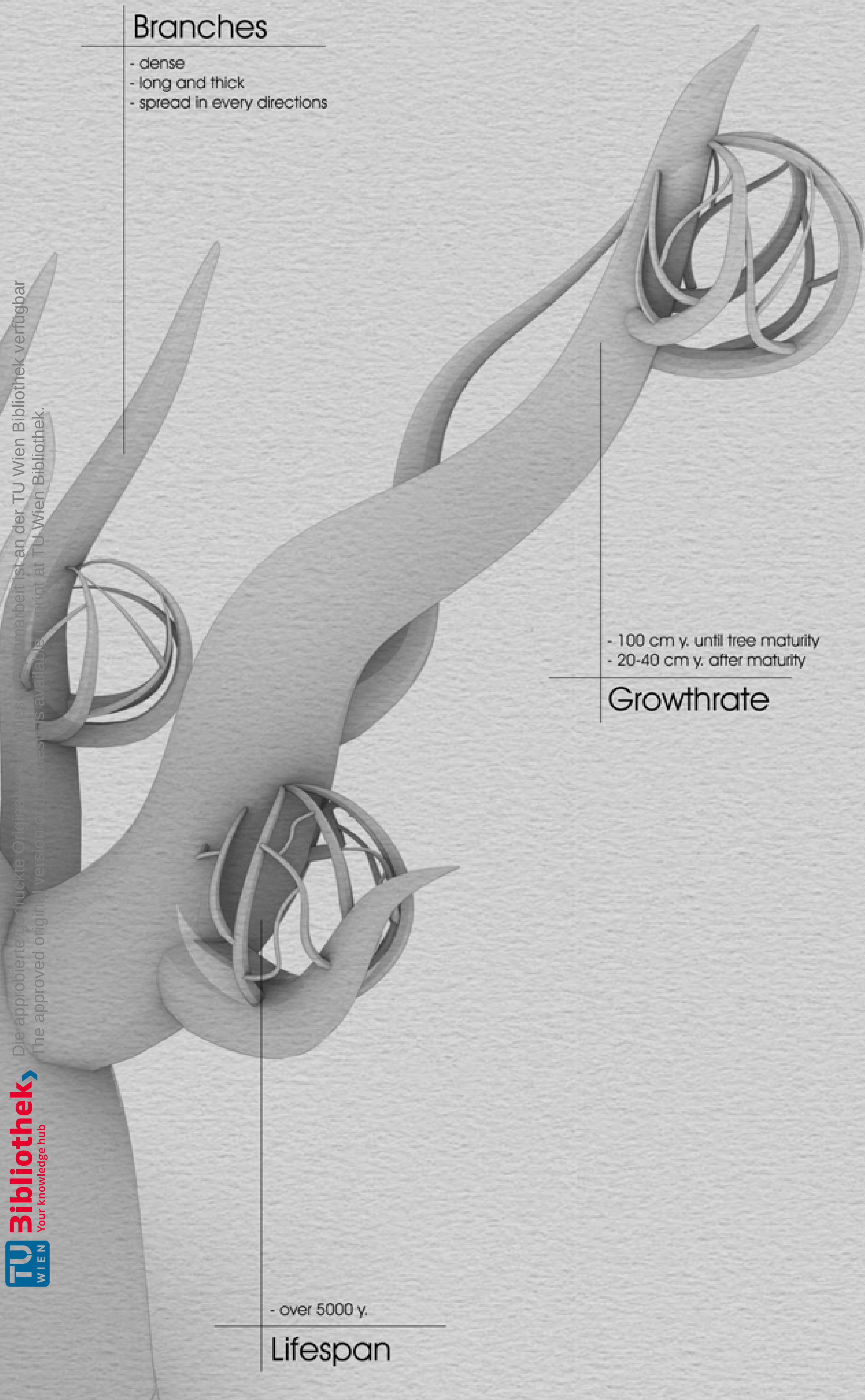


Fig. 4.2.3 - Tree Illustration


Branches
- dense
- long and thick
- spread in every directions
- 100 cm y. until tree maturity
- 20-40 cm y. after maturity
Growthrate
- over 5000 y.
Lifespan

4.3 Functions

Fig. 4.3.1 - Public Areas

- *Public areas*

The public area is always the bottom area of the units. It is the area where people can walk around and meet each other, as well as an area with a lot of utilities and meeting points. One exception is the southern unit, where I decided to make top area also public, with a nice restaurant where people can enjoy the view and the sun.

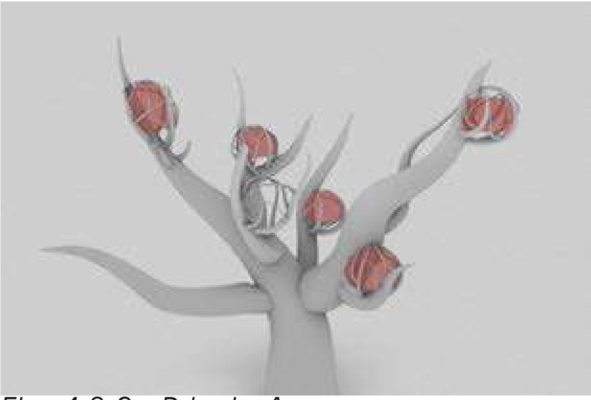


Fig. 4.3.2 - Private Areas

- *Private areas*

Private areas are the living areas, basically the apartments. All of the upper areas of the living space. There are four apartments per floor, and the number of private floors per unit varies from 4-6 depending on the location.

Fig. 4.3.3 - Hotel

- *Hotel*

I developed one of the units as a hotel, to be able to bring people from outside and experience the life on the tree. The bottom area of the hotel is a public space with a gym and a yoga room, and above are the rooms divided on 4 floors.

4.4 Room Program

The functions which are integrated in this project, are making this place attractive to every age. There are different activities for every group of people, such as event hall, gym and wellness center, bars, cafes and restaurants, playgrounds for the kids as well as kindergarten, youth center and lecture rooms for education.

Every ground floor is an open space between the walking platform and the building above it. This is a public space and the functions here are mostly outdoor activities like farming, playgrounds and bio markets.

The first floor is a space that is usually half open - half closed. The functions here are still in the public domain, and varies from unit to unit. Here are usually located activities like gym, wellness center, bars and restaurants, as well as library, youth center and other multi-functional spaces, all situated in separate units.

The private space or the living area starts form the second floor to the rooftop. Here Every floor is divided to four apartments. One floor can accommodate 8-12 people. One building, depends on the unit, can accommodate 35-65 people. The number of the people who could live on the tree can vary between 160 and 240 people. The rooftops are usually a semi-private space, where residents of that building can gather and use the floor for different activities as for example, cooking, family gatherings, sunbathing and so on.

The hotel is located at the most western unit, and it has 4 floors of which one contains the gym and wellness center, and the other floors contain each 8 rooms. The hotel could accommodate around 50 people.

Fig. 4.4.1 - Room Program

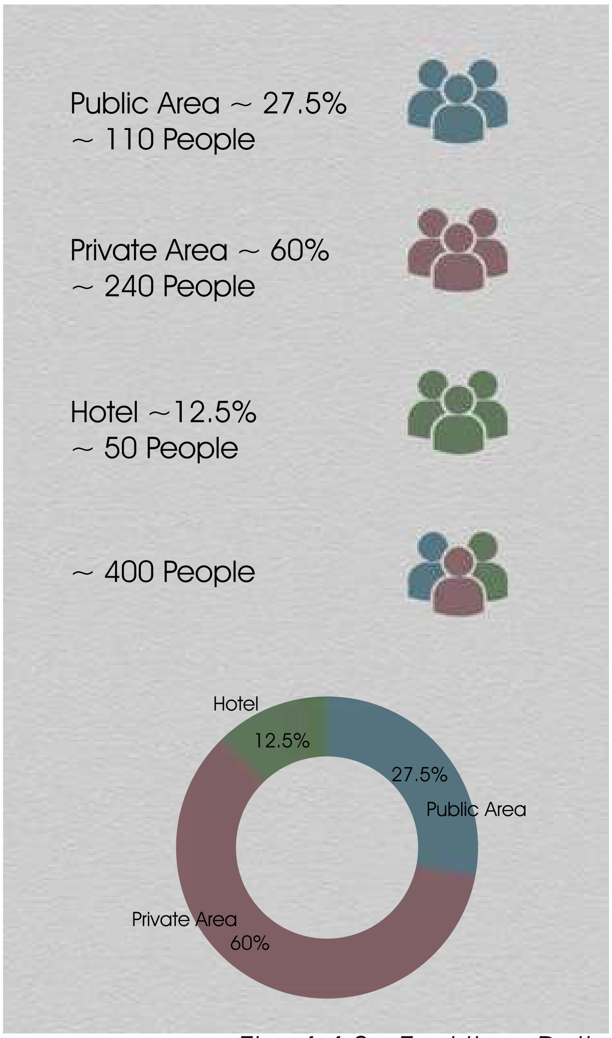
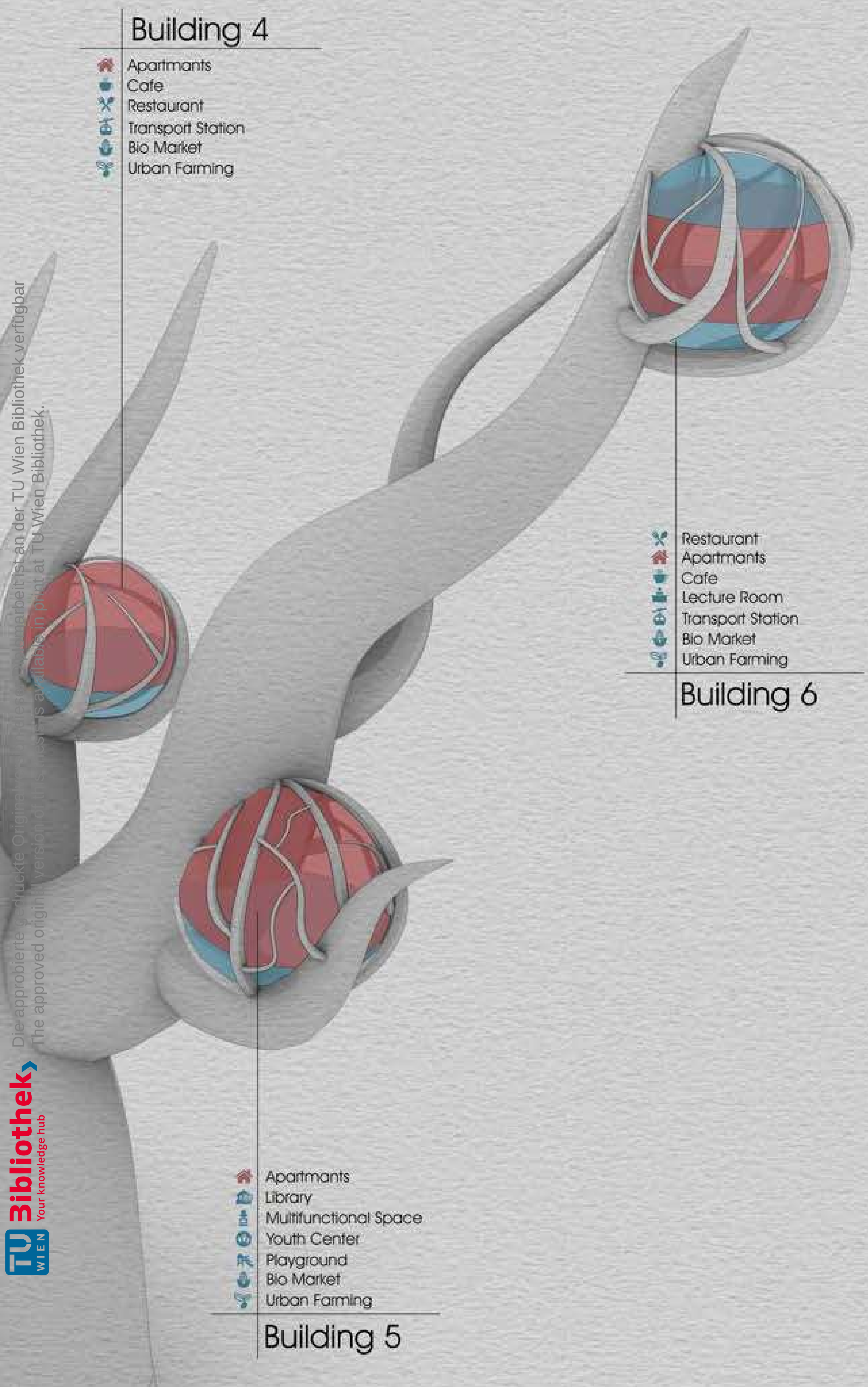


Fig. 4.4.2 - Funktions Ratio

Fig. 4.4.3 - Functions


Building 4
Apartmants
Cafe
Restaurant
Transport Station
Bio Market
Urban Farming
Restaurant
Apartmants
Cafe
Lecture Room
Transport Station
Bio Market
Urban Farming
Building 6
Apartmants
Library
Multifunctional Space
Youth Center
Playground
Bio Market
Urban Farming
Building 5

4.5 Walking Platforms

After developing the functions and function areas, I then developed a walking platform around all the units. Some of them could be extended and connected through a platform bridge, but others because of the height difference I had to connect in other ways.

The platforms and the bridges are made of Keilsteg wood. Keilsteg wood is a type of softwood that is used as a building material in many different types of construction projects. It has a high degree of dimensional stability and strength, and is very resistant to cracking and splitting. It is lightweight and easy to work with. It is also a good choice for use in outdoor construction, as it has excellent resistance to moisture and decay. The usage of this material is also an environmentally friendly choice, as it is sustainable harvested and is a renewable resource. For this project it was also a great solution because of its span. Depending on the thickness, its span length can reach up to 27 meters.

Fig. 4.5.1 - Keilsteg Wood

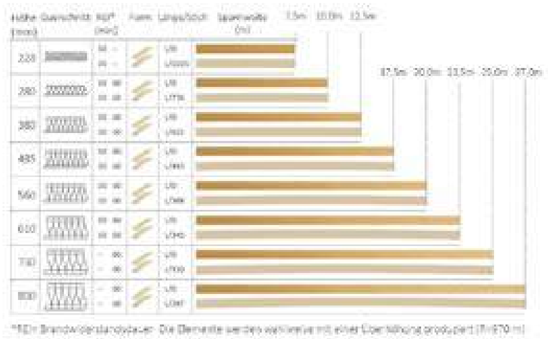


Fig. 4.5.2 - Keilsteg span

The Keilsteg platforms and the bridges between them are attached to the tree with cables, so the tree itself caries all of the load. With similar principles like the cable stayed bridges, the tree absorbs the compressive forces while the cables absorb the tensile forces. The cables are attached one side on the tree, as a supportive body, and the other side they are holding the beams, on top of which is located the Keilsteg platform. Attaching the road on a bridge to load-bearing pillars through cables helps to distribute the load of the bridge over a larger area. This helps to reduce localized stress on the bridge and makes it more stable. Additionally, the cables will act as shock absorbers, which will further help to reduce vibrations and reduce the risk of the bridge collapsing.

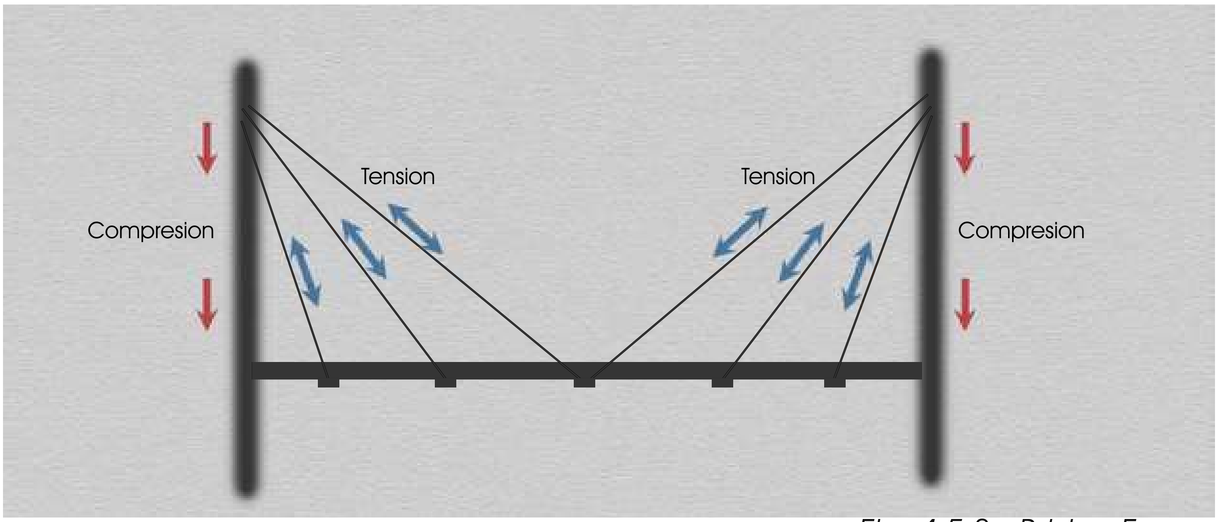


Fig. 4.5.3 - Bridge Forces

The on the platforms have a few layers of materials in it. Below is the Keilstieg wooden ceiling, covered with a thick layer of soil. On top of the soil comes the floor covering, which are long wooden bars, providing the walking areas for the people. They are set however with some distance between each other, which enables the soil to breathe, and vegetation to grow in between. Between the soil and the Keilsteg ceiling the drainage mat is located, as well as an anode, which is gathering electricity from the soil.

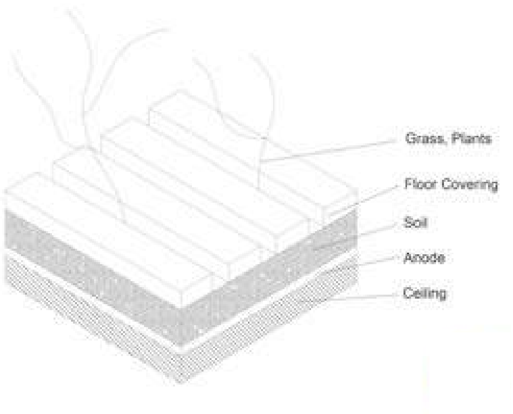


Fig. 4.5.4 - Ceiling cutout

Using the natural electricity found in the soil has been an interesting area of research in the last years. Scientists have discovered ways to extract electricity from the soil and use it to power homes and other applications. This energy can be harvested from the naturally occurring electrical fields in the Earth. The advantages of extracting electricity from the soil are vast. It is a renewable source of energy that does not contribute to climate change. It is also relatively inexpensive, since the process does not require any additional infrastructure or equipment. Trees and plants can play an important role in extracting electricity from the soil. Plants have a natural ability to absorb electrical energy from the earth, which can be converted into usable power. This process is known as phytomining. The plants with help of photosynthesis are transforming the solar energy into chemical energy, consumable for the animals and people. However, in the process, through the constant exchange of materials between the trees or plants with the soil, a lot of minerals and nutrients that were sufficient in the photosynthesis are released in the soil. These are further processed by the variety of microorganisms in the soil, and elements like hydrogen and carbon dioxide are being released in the soil. With those, also molecules of isolated electrodes are being released, and these electrodes can be harvested with an anode, and we get electricity. Overall, extracting electricity from the soil is an innovative and sustainable way to generate power.

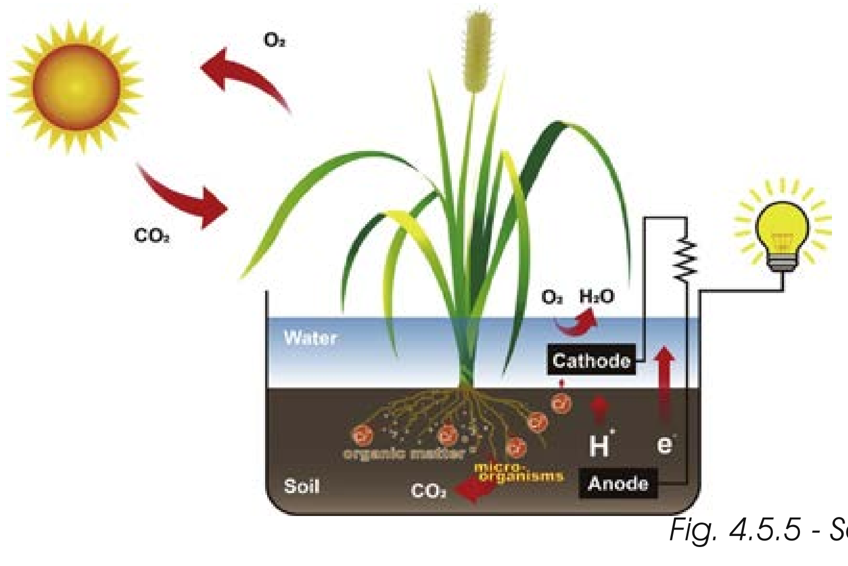
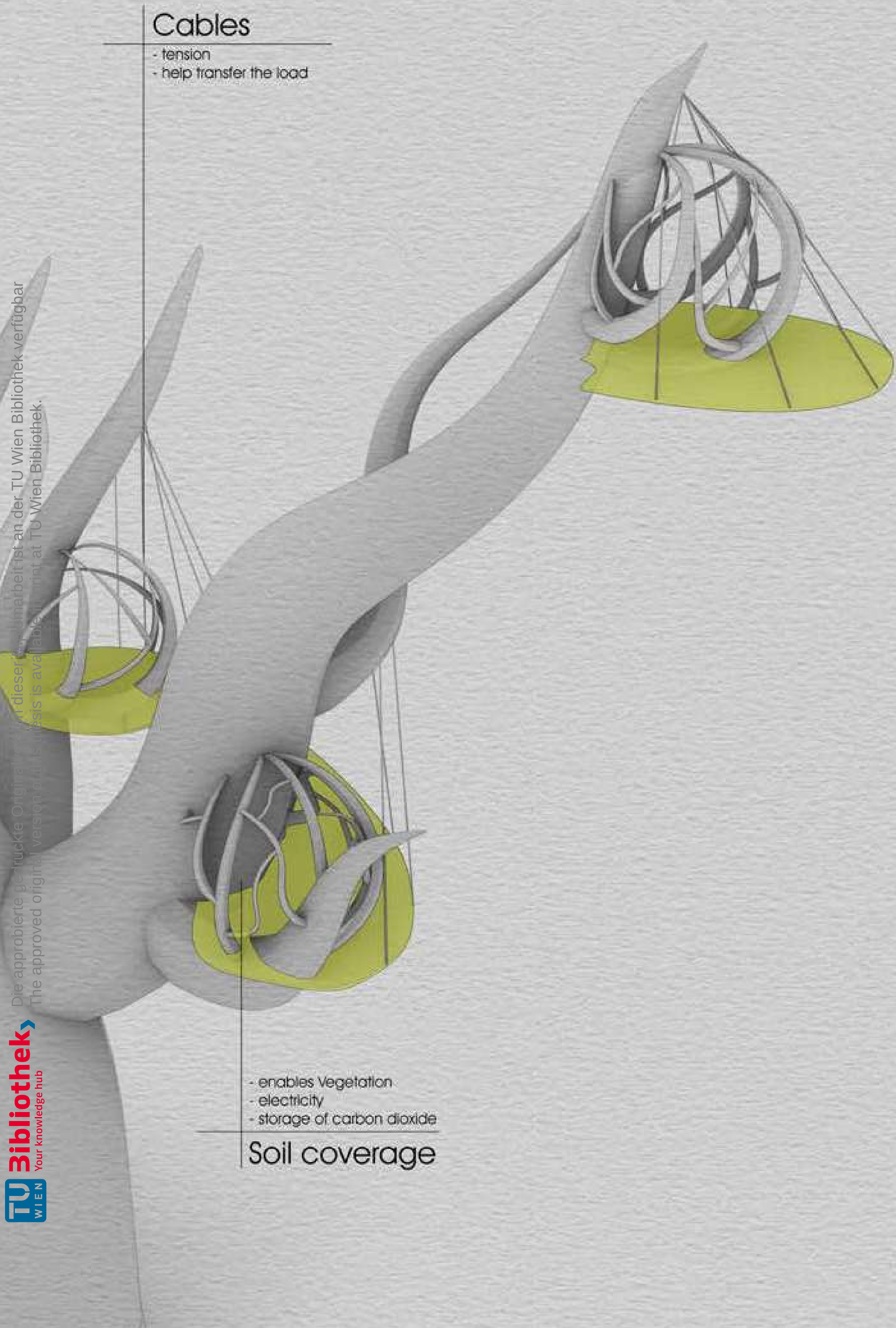


Fig. 4.5.5 - Soil electricity

Fig. 4.5.6 - Walking Platforms


Cables
- tension
- help transfer the load
- enables Vegetation
- electricity
- storage of carbon dioxide
Soil coverage

4.6 Assembling the Units

As the tree grows more branches, more opportunities for building on the tree appear. When a new branch start growing, in a building area, their growing path is lead through wooden frames, build by people, which show the tree the direction in which to grow. This enables the people to plan the new unit according to the new branches location, and use the nature in its living form to build their homes. The branches then grow until they get long and strong enough to be connected and fastened to the tree trunk. From these branches then further, smaller branches grow, making the structure more stable.

Fig. 4.6.1 - Wooden Frames

Once enough strong branches have grown and been connected to the main tree, a shell of these branches is created, where the building will be located. The branches serve as pillars which will be connected with a net of beams, supporting the ceiling on every floor. The floors in form of a circle, are assembled on top of the beams, which divide the space in different levels. After that every floor is filled with drywalls, dividing the space and creating apartments. On the outside then comes a glass shell that divide the inside from the outside to some extend.

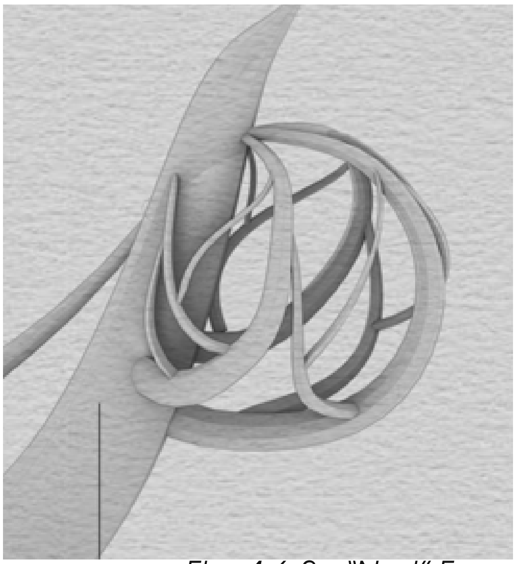


Fig. 4.6.2 - "Nest" Form

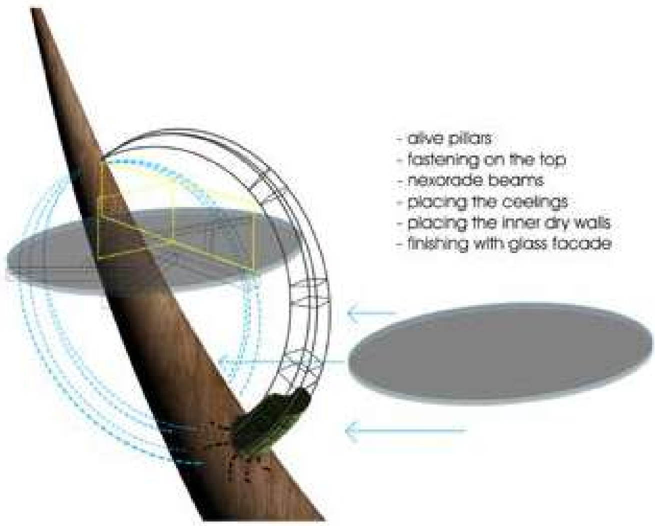


Fig. 4.6.3 - Assembly

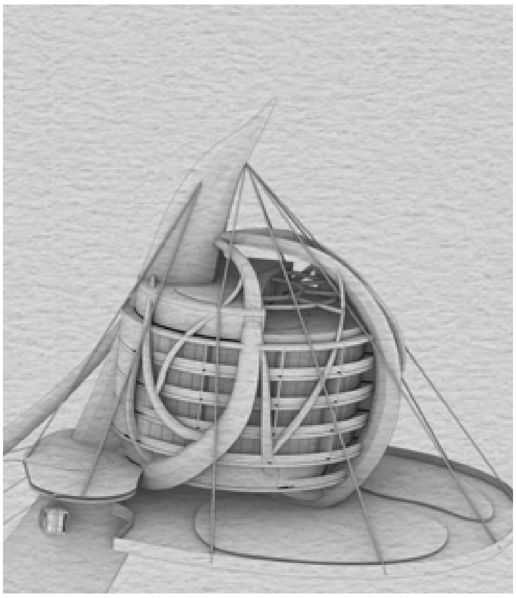


Fig. 4.6.4 - "Nest" Form after construction

4.7 Floor Movement

The floor covering, the layer above the soil, are wooden bars stretching throughout the space, from one wall to the other wall. These bars are wall covering as well as they are floor covering. They stretch in one direction, on the x axis, parallel to each other, but they can also move up and down to the z axis. This is how, some of the furniture is actually build by the floor covering itself.

Fig. 4.7.1 - Floor shaped furniture

As the floor covering moves from one wall to the other and cover the walls as well, it creates a u shape section of the apartments. This enables to bring some of the soil up on the walls as well, where a net between the solid and the bars is placed, from which plants can freely grow. The sides of the apartments are then full with different kind of plants and the middle area is where the people move and all of the furniture

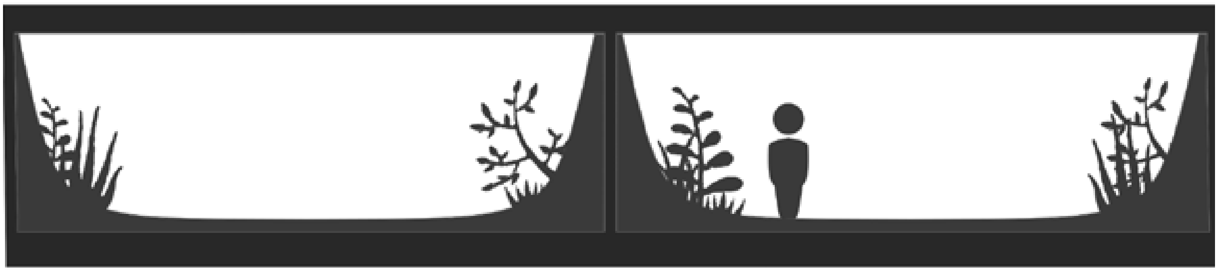


Fig. 4.7.2 - Apartment Secition

4.8 Nexorade Beams Connection

The walking platforms which build the upper floors are attached to the "pillars", or the branches through a net of nexorade beams. These beams help transport the load of one apartment to the branches and eventually to the tree. Wooden beams of a nexorade are intricately connected to provide support and stability. These beams, typically made of sturdy hardwood, are arranged in a criss-cross pattern and fastened together using nails or screws. The connection between the beams creates a strong, durable structure that can easily bear heavy loads. The nexorade's design also makes it ideal for outdoor use, as the wood is resistant to rot and moisture. In addition, the nexorade's modular design can easily be adapted to fit any space, and its lightweight construction allows for easy transportation and installation. By varying the engagement length, different sizes of nexorades can be built using same basic configurations. Nexorades have only one type of joint that connects only two nexors. Another advantage is that none of the components requires complex technology, only simple tools are required for construction.

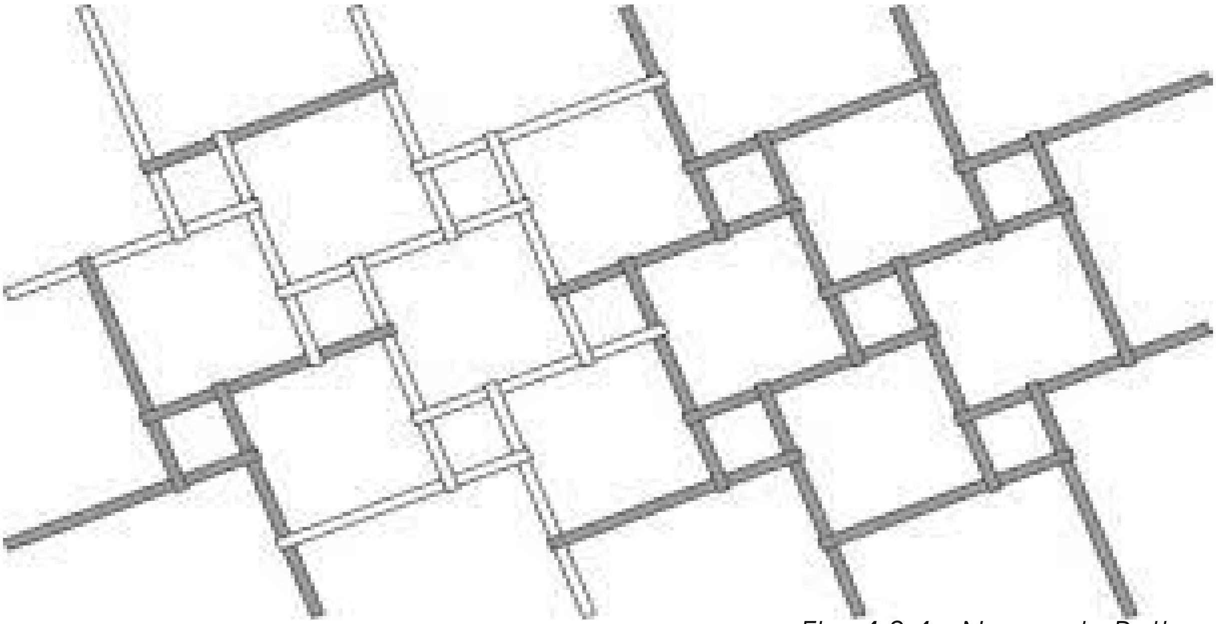


Fig. 4.8.1 - Nexorade Pattern

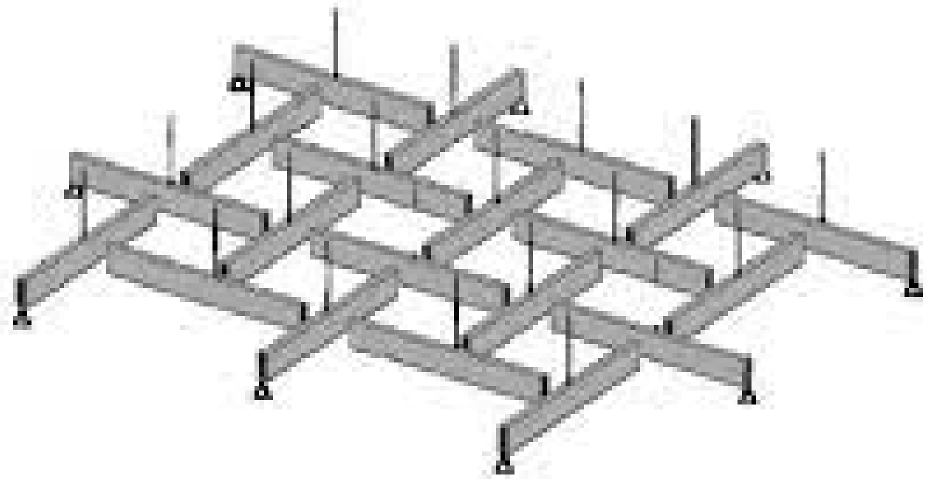


Fig. 4.8.2 - Nexorade Connections

The surface in these units is in a shape of a circle, because of the surrounding branches. On this plan we can see, how the beams are connected with each other into a circle, to provide support for the ceiling that comes on top. It is a pattern of a triangular connection developing in the direction so it can fit the shape of the platform. Both ends of the most beams are connected to a different beam, while some beams are connected to the supporting body from one side. By the joints, the beams are placed on top of each other through slots carved out at the ends of the beams and then screwed together, which enables a stable connection.

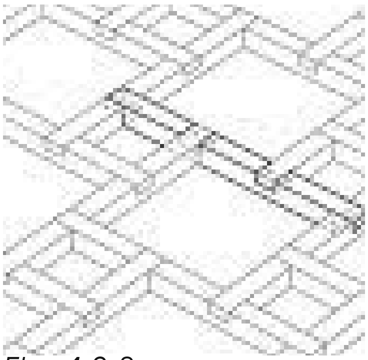


Fig. 4.8.3

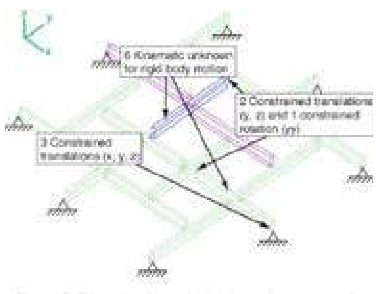


Fig. 4.8.4

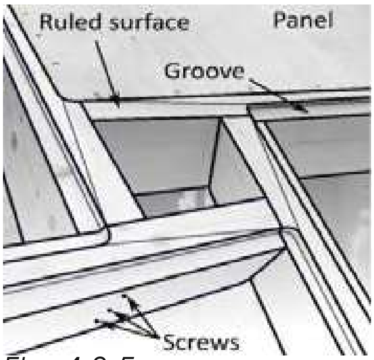


Fig. 4.8.5

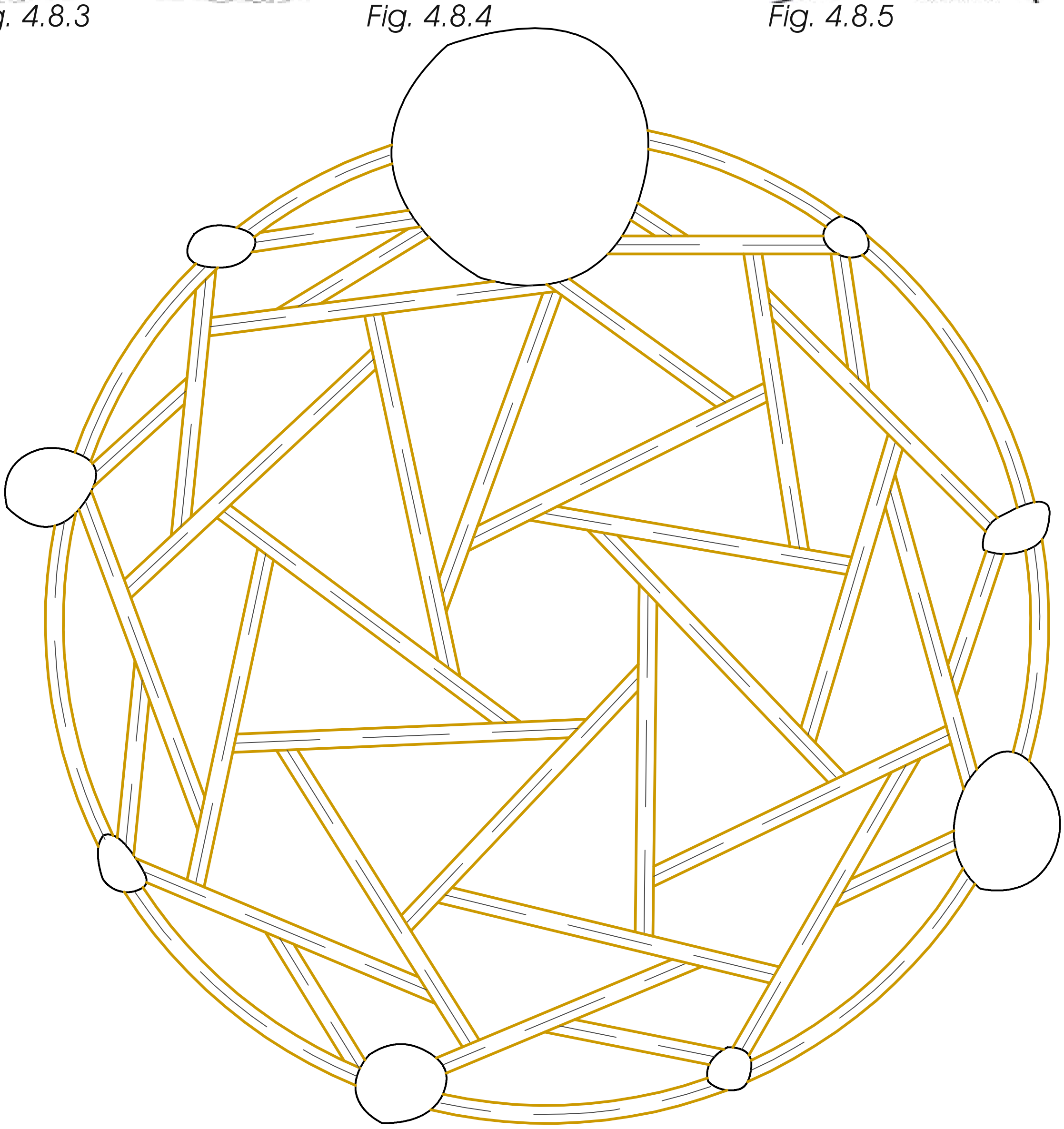


Fig. 4.8.6 - Nexorade Beams by the Units

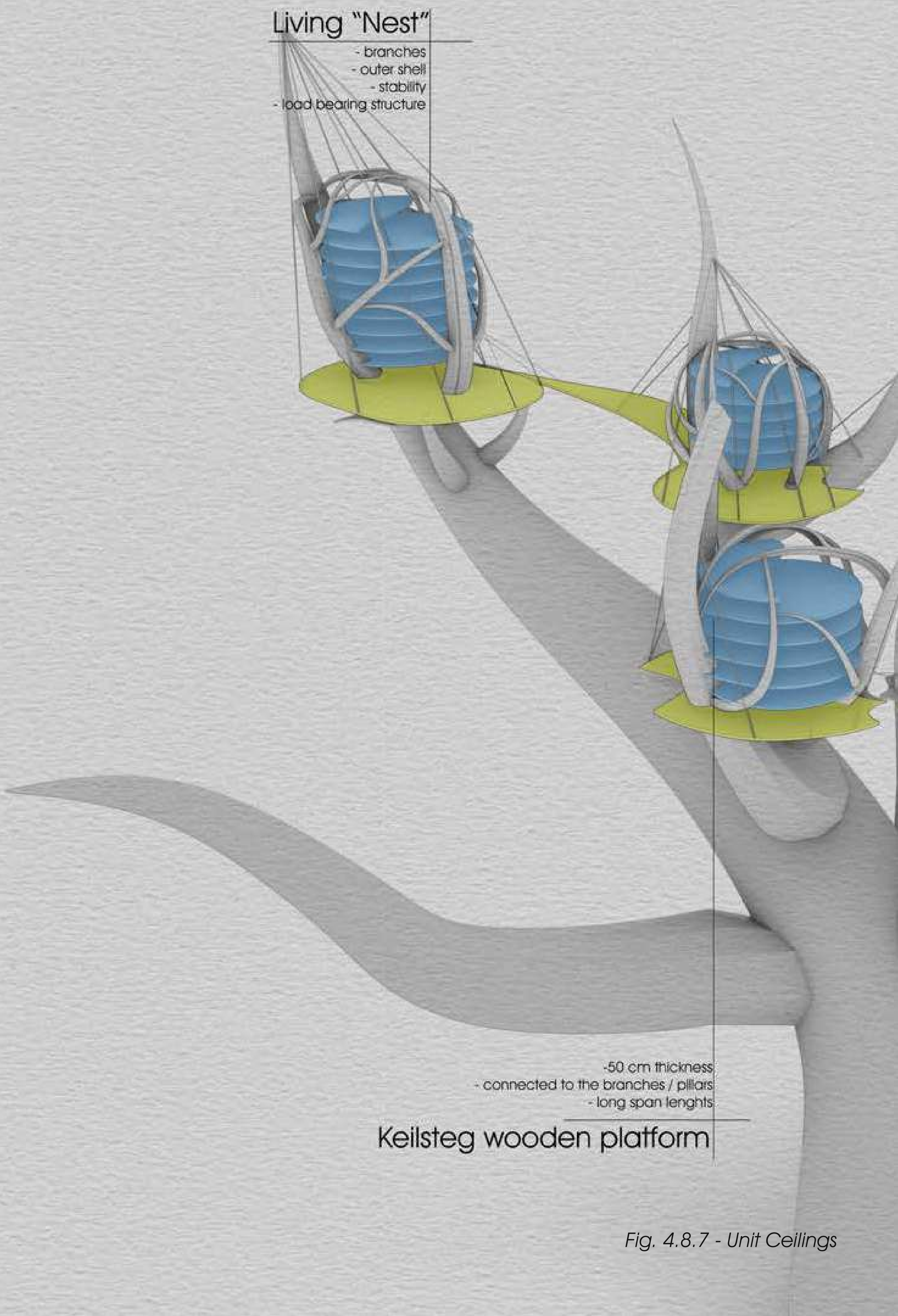
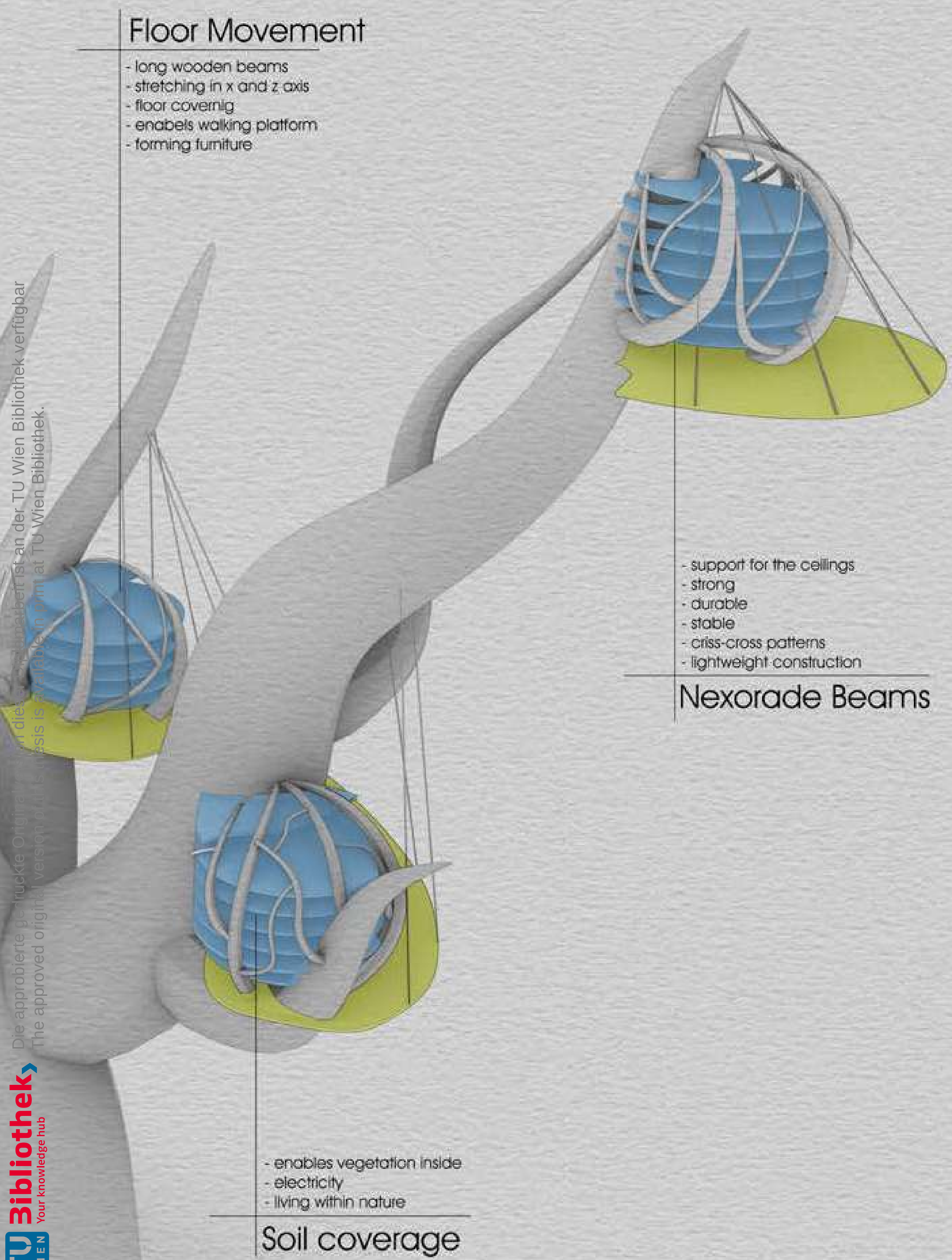


Fig. 4.8.7 - Unit Ceilings


Floor Movement
- long wooden beams
- stretching in x and z axis
- floor covernig
- enabels walking platform
- forming furniture
- support for the ceilings
- strong
- durable
- stable
- criss-cross patterns
- lightweight construction
Nexorade Beams
- enables vegetation inside
- electricity
- living within nature
Soil coverage

4.9 Connections

Because of the big height difference between the Units, not all of them could be connected with bridges, so I needed a different kind of connection. Adding cable cars to the tree, brings a lot of movement and life to the place. Cable cars are a unique, efficient and fun way to get around. They have many advantages over other modes of transport, including their convenience and speed. They are an incredibly efficient way to move large numbers of people quickly between locations, and are particularly well suited to hilly terrain. Cable cars are also incredibly safe, and have been proven to have a much lower rate of accidents than other forms of transportation. Moreover, they are very energy efficient, with no emissions or pollution, making them a great choice for those who are trying to reduce their carbon footprint.

Developing 5 stations across the tree, enables every unit to be good connected and reachable. They enable the transport of people and goods in the heights of the tree. The cable cars on this tree will offer stunning views of the surrounding landscapes and vegetation. Eventually this kind system could be used to connect the tree to some surrounding trees or elevations, to bring people on the ground.

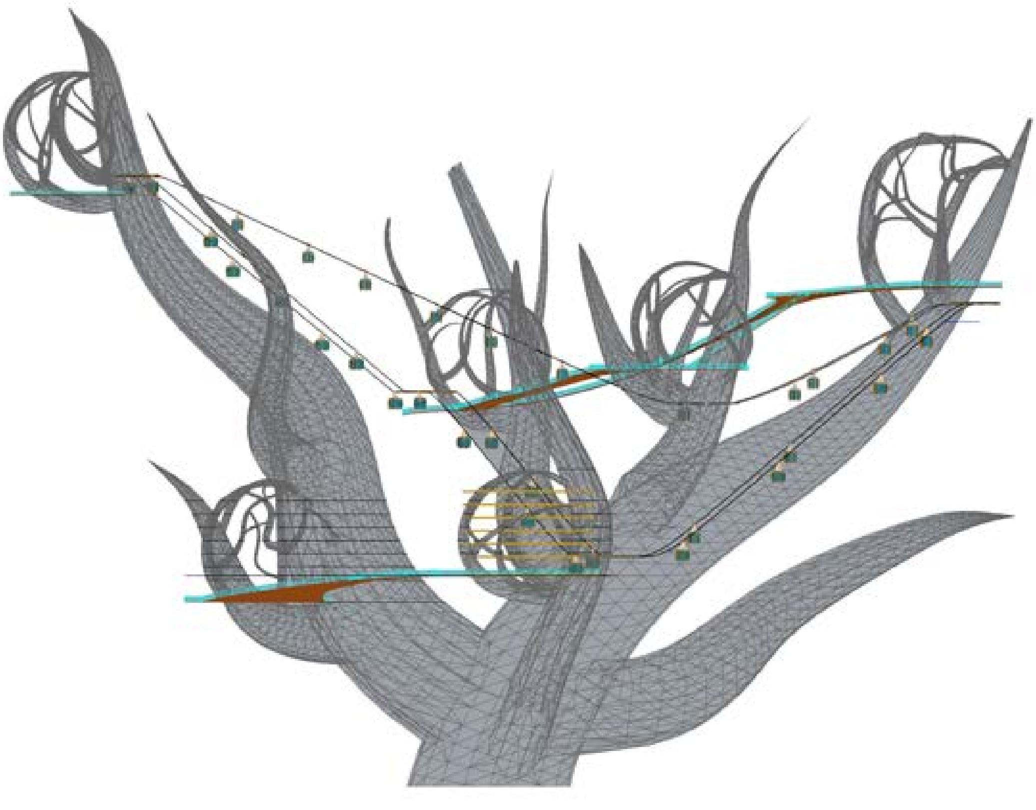


Fig. 4.9.1 - Connections View

The cabins have a wooden construction, with glass from the sides, which can be opened if the weather is nice, to better enjoy the views. It is connected to the wires, where it moves along them with help of electricity.

Fig. 4.9.2 - Cable Cars

The stations can be found on the ground floor of some of the units. They contain one or two big wheels, built in the tree from one side and hanged on it with cables from the other, as well as a walk-in platform, where people can reach the cabins.

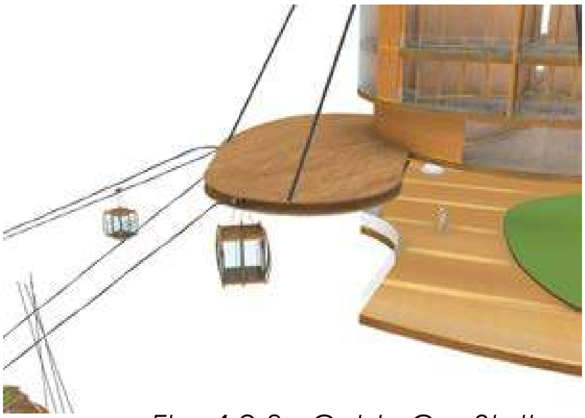


Fig. 4.9.3 - Cable Car Stations

Two wheels from different units are connected with wires or cables which with help of electricity move the cabins from one unit to the other. It enables the people to move around the tree, experiencing incredible views meanwhile.

Fig. 4.9.4 - Connection Line

Fig. 4.9.5 - Cable Car Connection

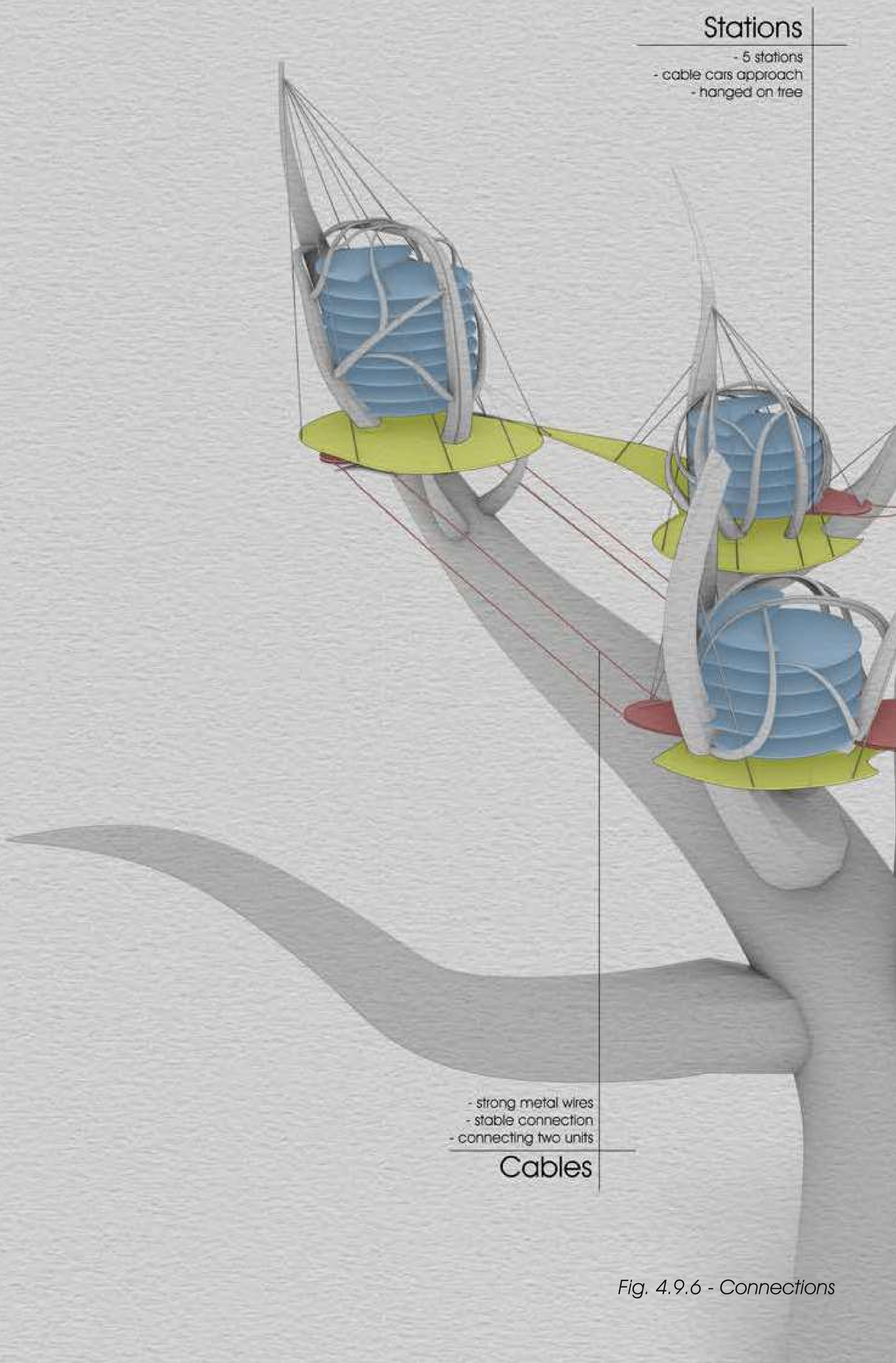
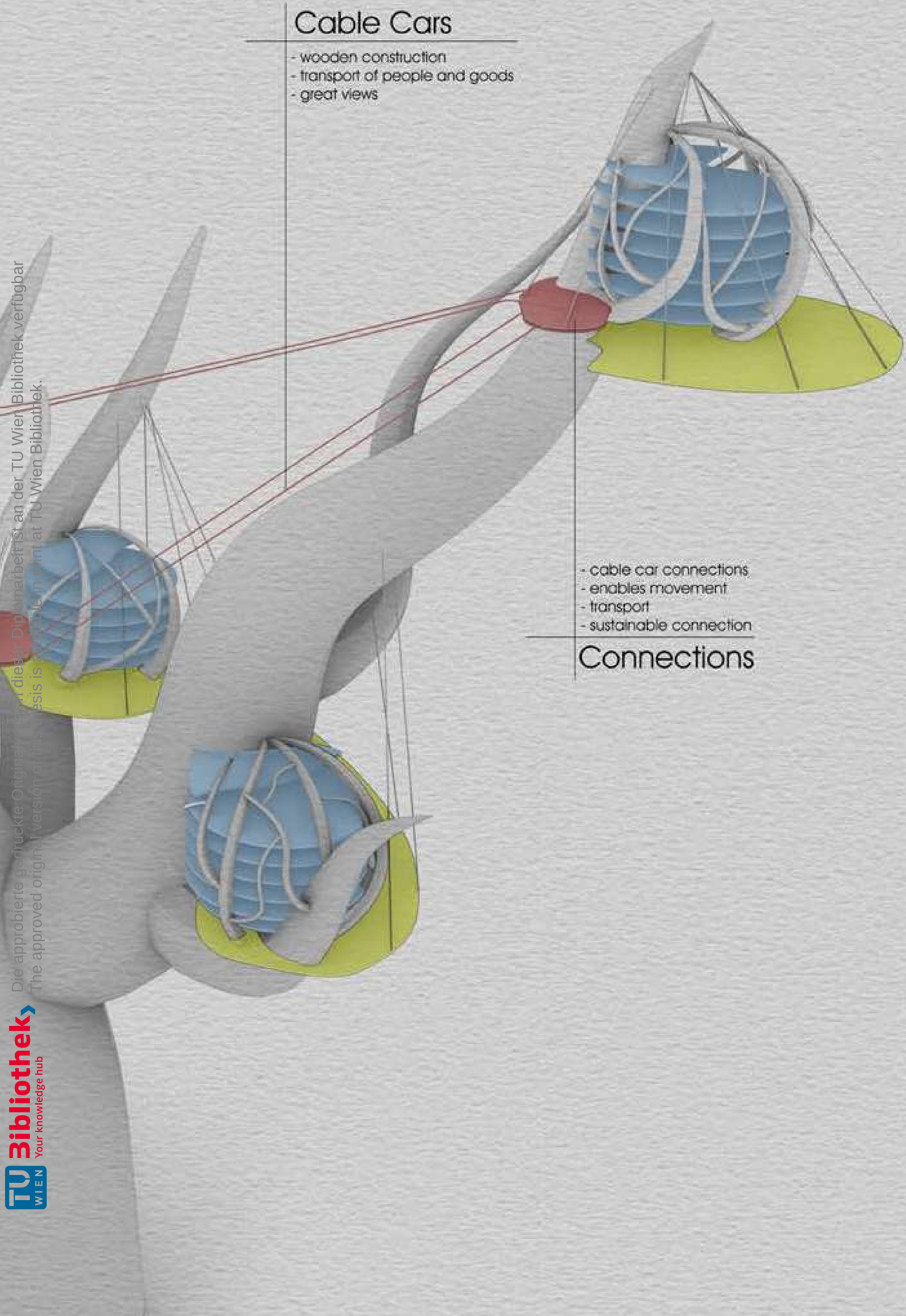


Fig. 4.9.6 - Connections


Cable Cars
- wooden construction
- transport of people and goods
- great views
- cable car connections
- enables movement
- transport
- sustainable connection
Connections

4.10 Ground Connection

In the alternate world, where people are turned to nature, the transport possibilities could be endless. Naturally cars and other vehicles would probably be modified and adjusted as sustainable and free of carbon emissions transport machines. I am not going to get into that, as these vehicles are irrelevant for my project. Because of the variety of ways, transport mechanisms could be further developed, the question of ground connection and how could people actually reach the tree is somewhat difficult to answer. I considered the following ways of connecting the tree with the ground:

- Cable Cars

One way would be the same connection used on the tree, the cable cars. The already existing stations, could be extended with adding connections from the tree to the local environment, another tree or a near by hill. This way people can reach the tree from the ground, or surrounding trees and transport their goods with the cable cars.

Fig. 4.10.1 - Cable Cars

- Flying Vehicles

Vehicles could be developed in a way which enables them to fly and transport people and goods between different heights. They would serve as a "flying taxi" to enable people to go from point A to point B. In this way, people could be picked up or dropped off on the tree, without a need for additional waiting stops or stations.

Fig. 4.10.2 - Flying Vehicles

- Teleportation

Teleportation is a form of transportation we have always dreamed about. In the perfect world this could also be one way of transportation of goods and people without causing any damage to the environment. Teleportation Portals could allow people the access of certain points on the tree.

Fig. 4.10.3 - Teleportation Portal

4.11 Escape Routes

- Rope lowering

Ropes being dropped from the tree could provide a fast escape route in case of an emergency where an immediate evacuation is necessary. The ropes themselves could be stored in the Units storage rooms, and would enable people to quickly escape the tree. Developed ropes mechanisms can enable anybody to comfortably, get on the ground, and the big number of ropes can help speed up the process.

Fig. 4.11.1 - Escape Ropes

Fig. 4.11.2 - Rope lowering

- Zip-lines

Quickly assembled zip-lines in case of an emergency, would be another way to quickly leave the tree. After being lowered on the ground, or some nearby trees, professionals can quickly assemble the zip-line, and allow people to evacuate even faster.

Fig. 4.11.3 - Ziplines

Fig. 4.11.4 - Ziplines

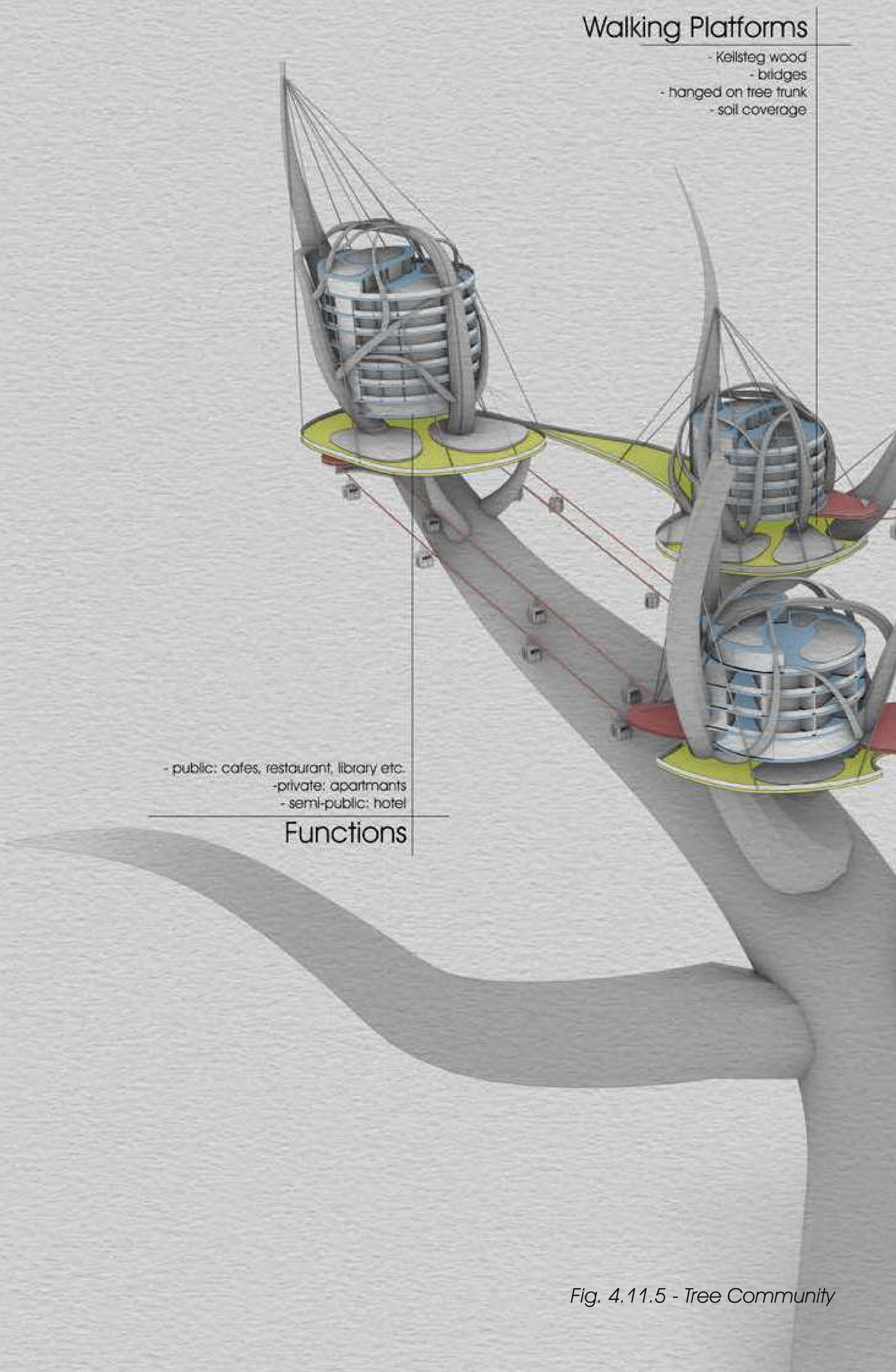
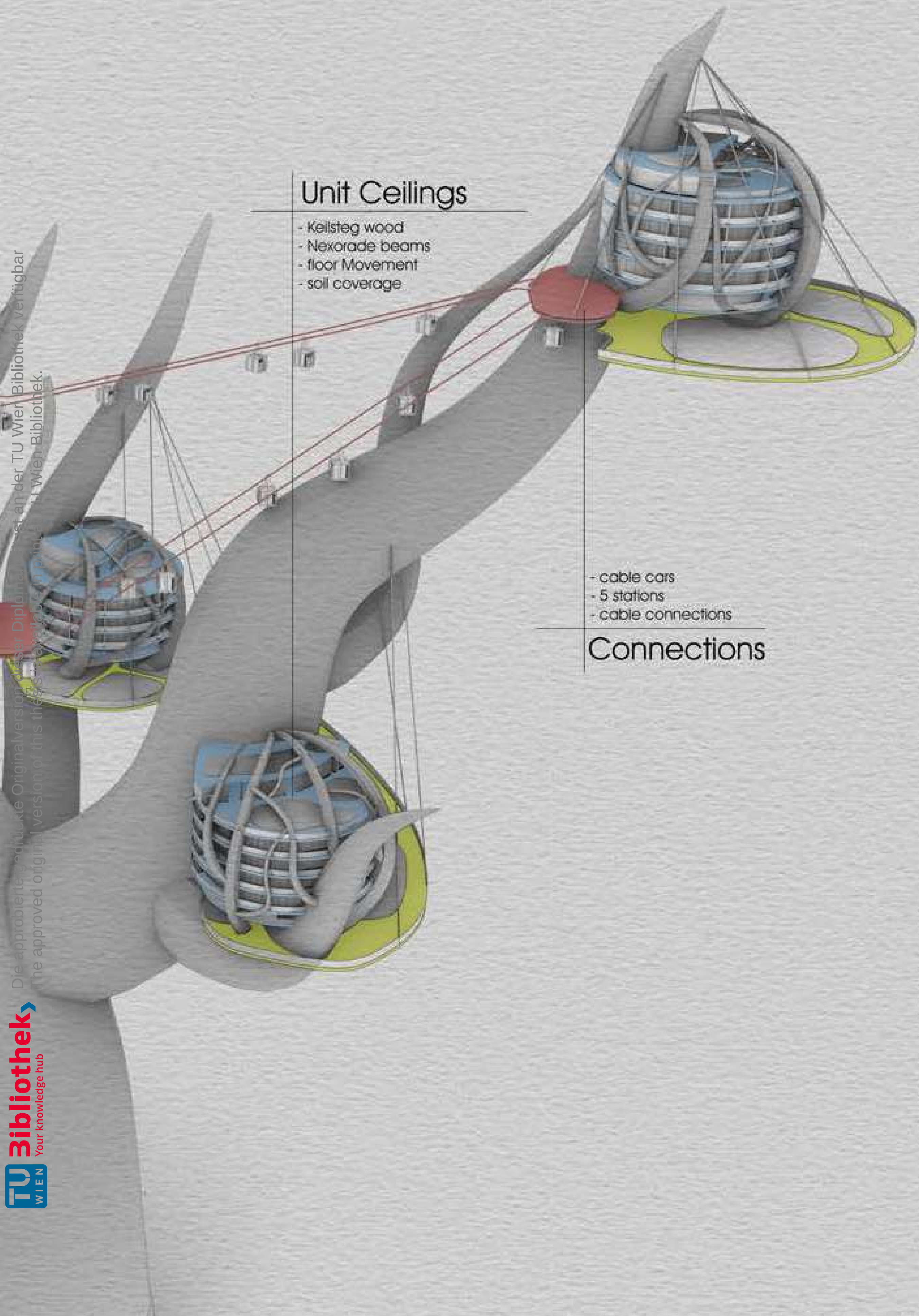


Fig. 4.11.5 - Tree Community


Unit Ceilings
- Keilsteg wood
- Nexorade beams
- floor Movement
- soil coverage
- cable cars
- 5 stations
- cable connections
Connections

4.12 Floor Plan Concept

The floor plan in this project is an open plan, where using sliding elements like sliding walls or sliding balcony doors, the plan is modifiable and adjustable to different scenarios. By moving the walls around the floor, the rooms can get different shapes and forms, or the floor can get completely open, making the functions and the activities vary.

The walls are attached to a ceiling slot , which enables them to move in both directions of the slot and to rotate. They then can manipulate the space and create open, semi open, or even completely closed areas. The advantages of sliding walls are several:

- Increased Flexibility: Sliding walls allow for more flexibility in the design of a space. You can easily change the size and shape of a room, and move walls around to create different configurations.

- Space Saving: Sliding walls save space, as they can be tucked away when not in use. This makes them great for small spaces, or when you need to divide a large room into two separate sections.

- Natural Light: Sliding walls also let in natural light, helping to brighten up a room and create a more inviting atmosphere.

- Privacy: They can also provide extra privacy when needed. This makes them perfect for bedrooms, offices, or any other space where you need some extra privacy.

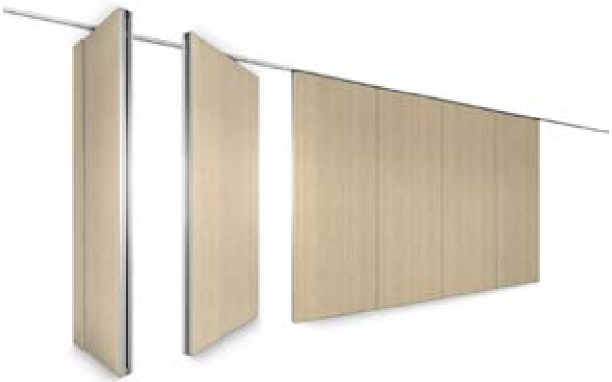


Fig. 4.12.1 - Sliding Walls

Fig. 4.12.2 - Sliding Walls

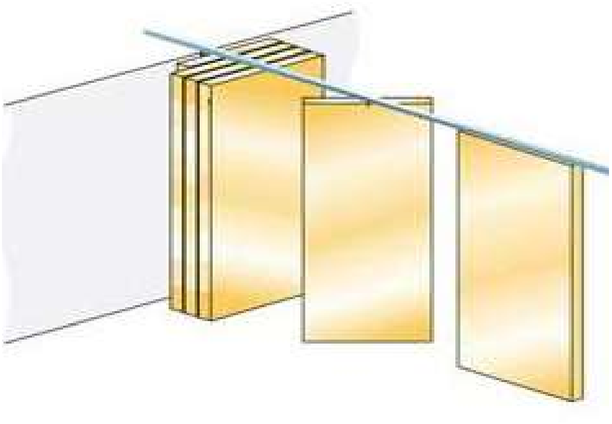


Fig. 4.12.3 - Sliding Walls

The Units are always build from the south side of the tree trunk, orienting the apartments mostly to the south, enabling the sun to get to the apartments. While I was deciding on the plan form, I tried out different possibilities, and I found three variations that would work with my project, making the space able to transform. By placing the staircases next to the tree trunk, the rest of the circle shaped plan is the space left to be divided into apartments. Regarding of the walls and their direction, I chose 3 possibilities: rectangular, round, and an organic shaped plan. Then by carefully planning the ceiling slots, I structured the space in different rooms, enabling them with natural light, and free spaces like balcony's.

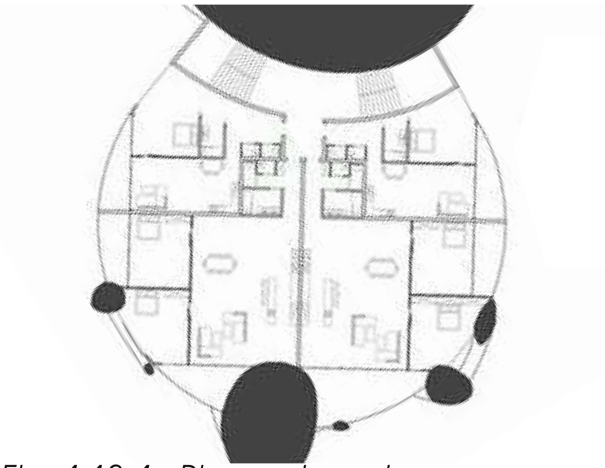


Fig. 4.12.4 - Plan rectangular

- *Rectangular shape*

The rectangular shape, is offering a clear structural layout of the rooms, opening them to a balcony on each side of the floor. However, the shape of the rooms, create a dark space in the middle of the circle, which is not getting enough light, so I decided to use this area for anteroom, bathrooms and storage rooms. It also works as contrast of the outside form of the building, where the shapes are more organic.

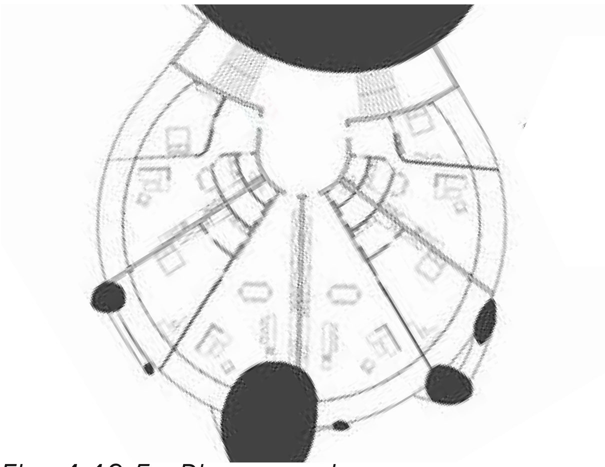


Fig. 4.12.5 - Plan round

- *Round shape*

The round shape, allows me to get closer to the outside look of the building. The dark space in the middle is now used as a distributer, enabling an entry to every apartment. The rooms have different shapes now, as they get wider closer to the facade. The balconies are available from every side and for every room that has a natural light.

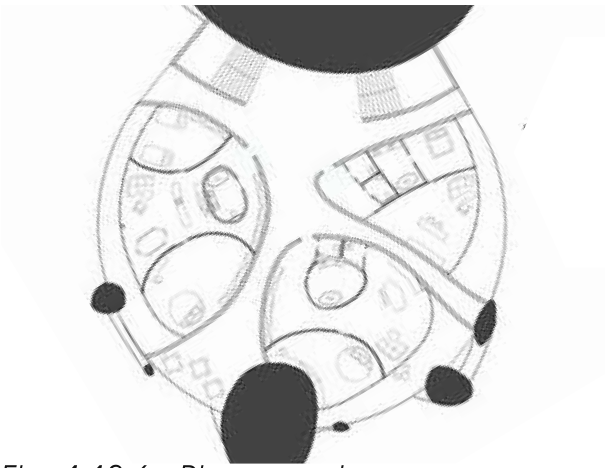
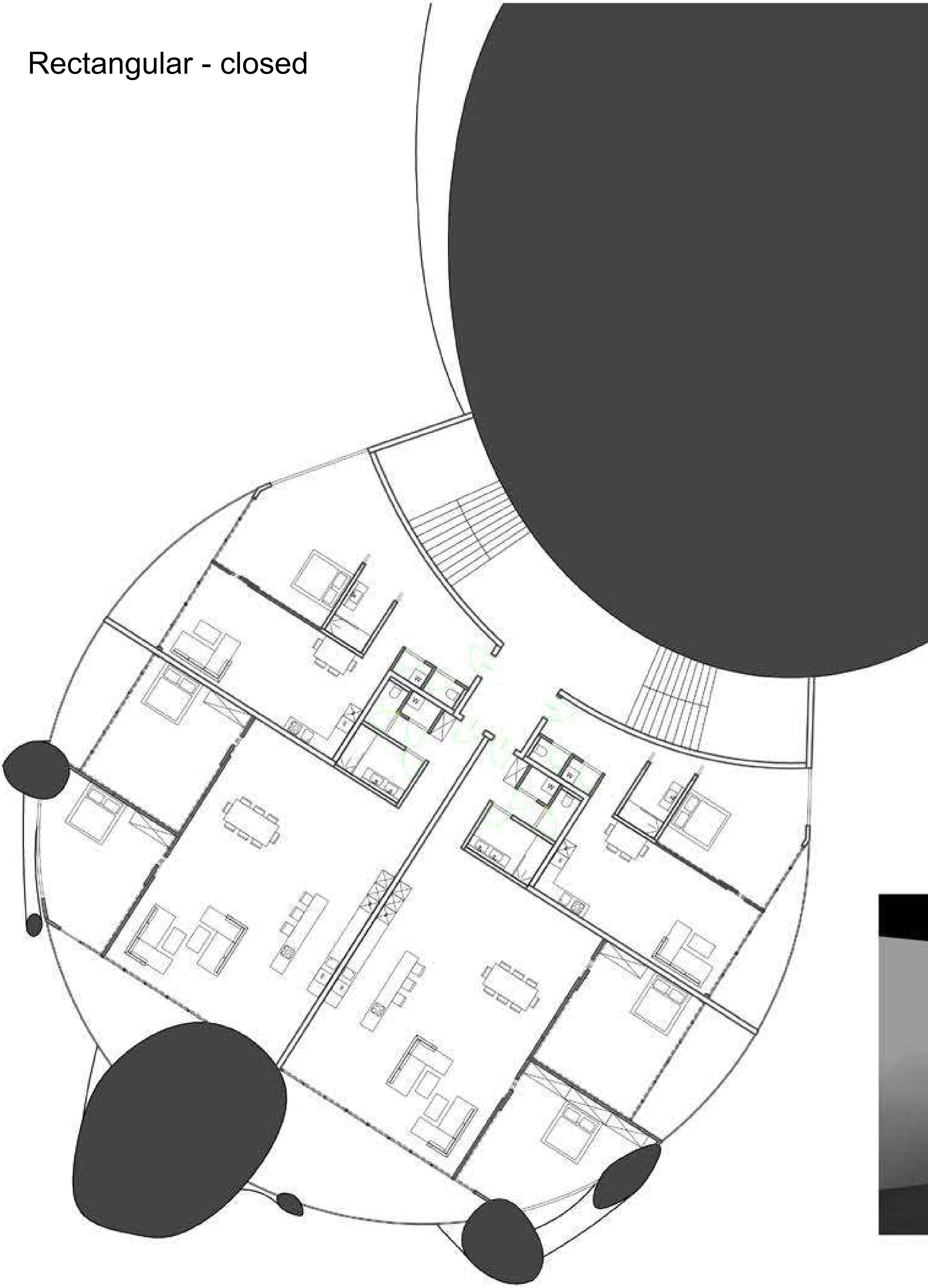


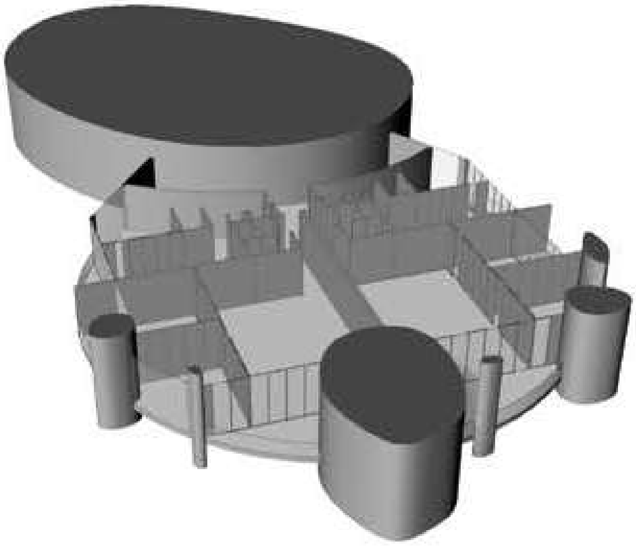
Fig. 4.12.6 - Plan organic

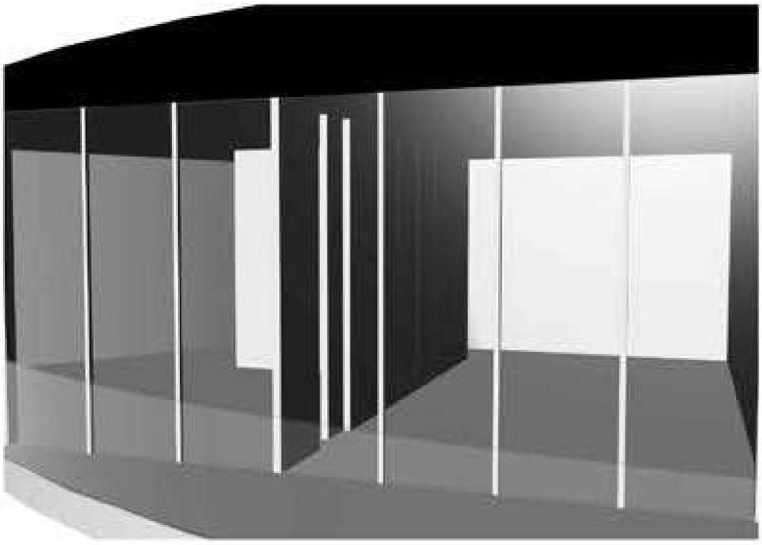
- *Organic shape*

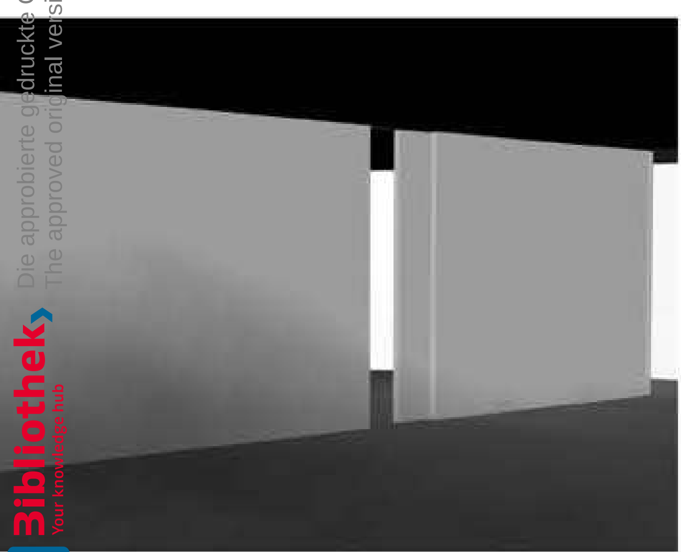
The organic shape, follows the form of nature and of the project, allowing the connection to nature to grow stronger, and creating unique and interesting floor plans. The apartments are oriented towards the outside, making the amount of sunlight bigger. In this case however, the apartments are smaller, all with a private balcony, and the space between them is used as a common space for the people who live there.

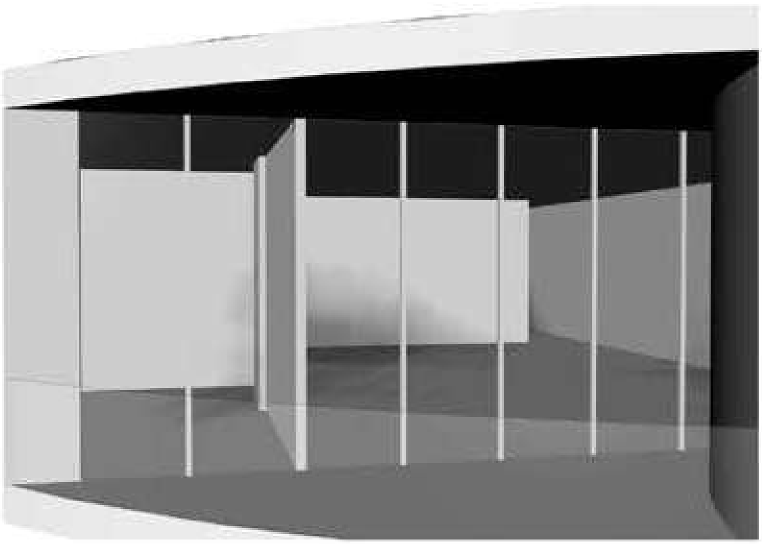
Rectangular - closed



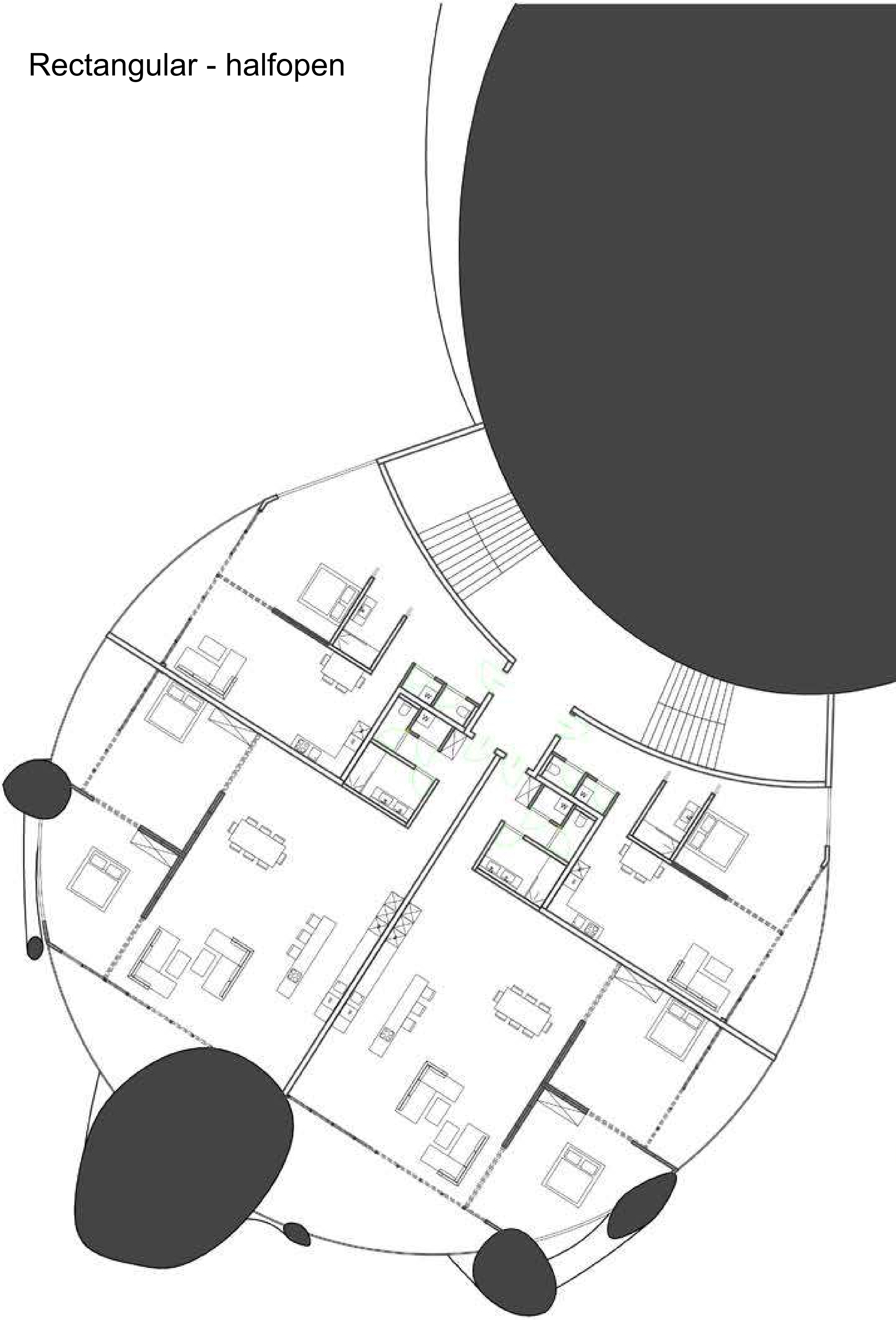


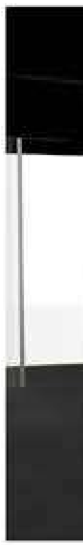


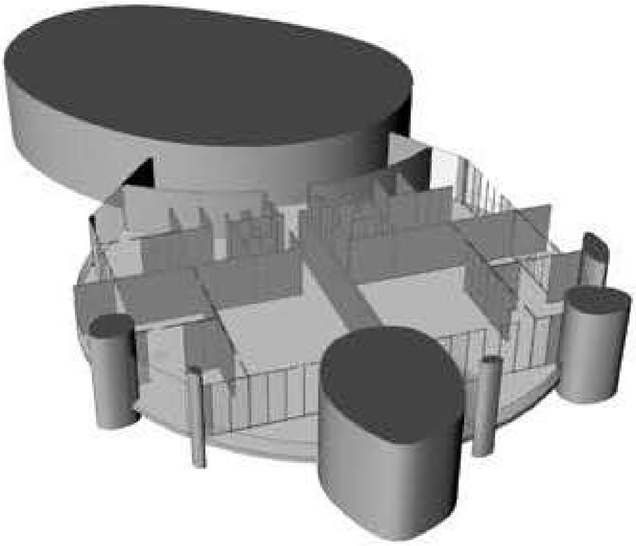


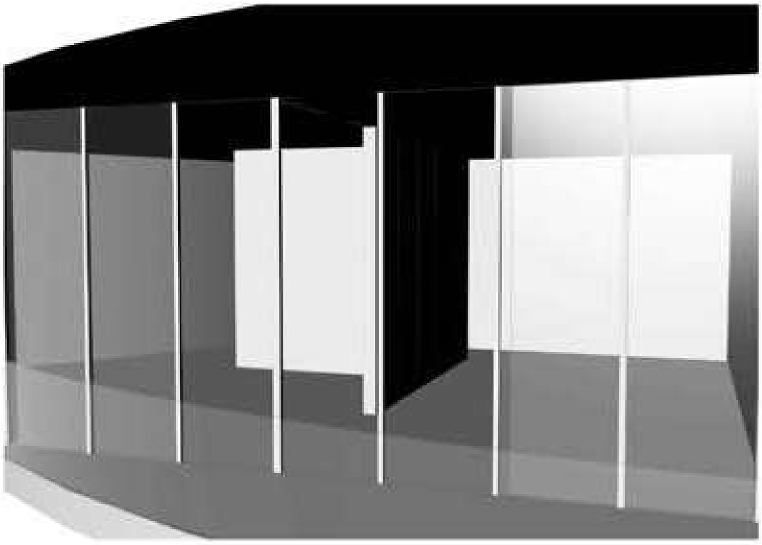


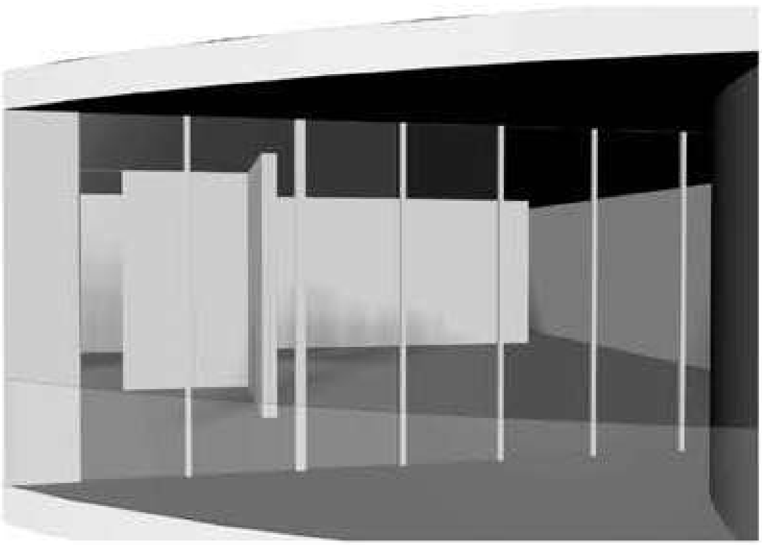
Rectangular - halfopen

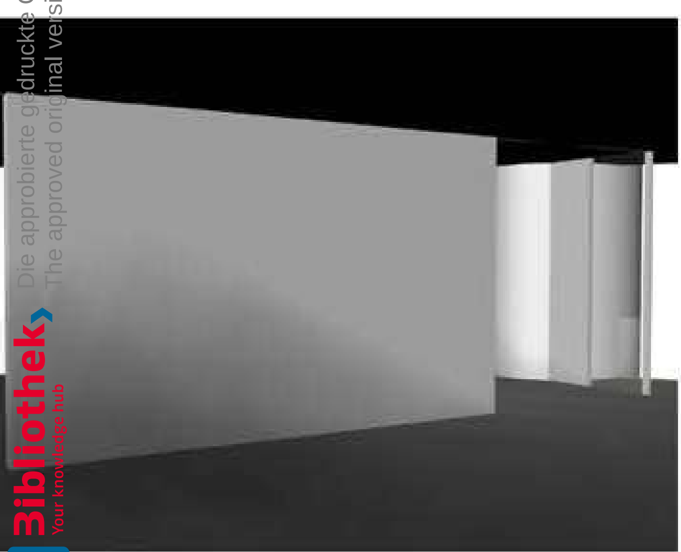




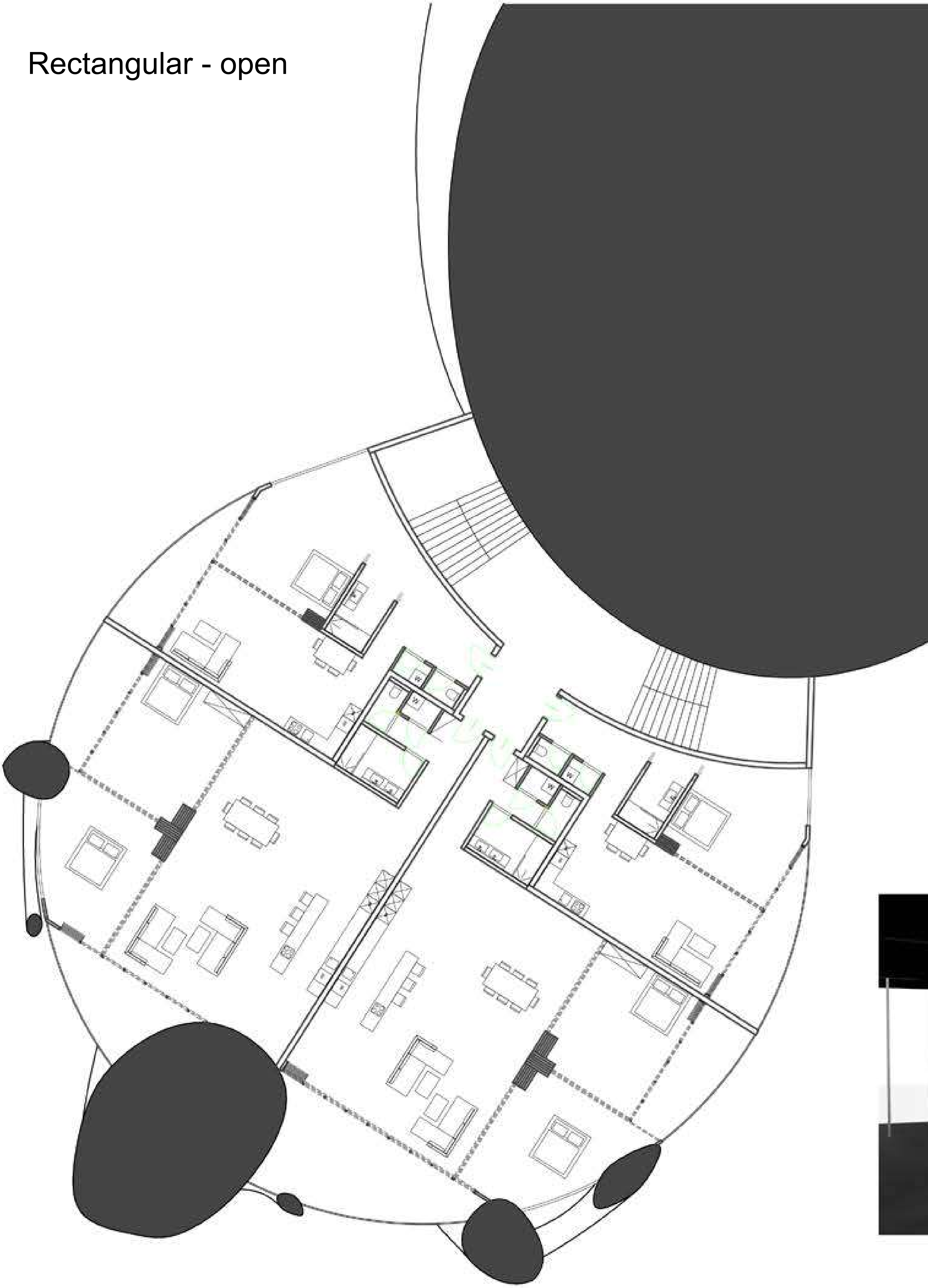


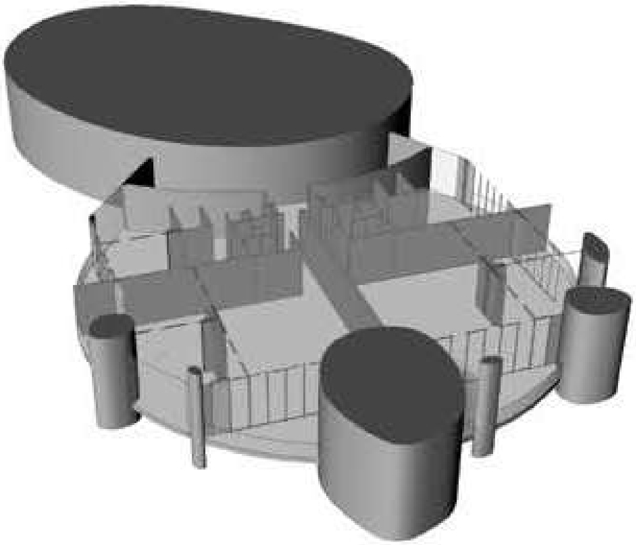


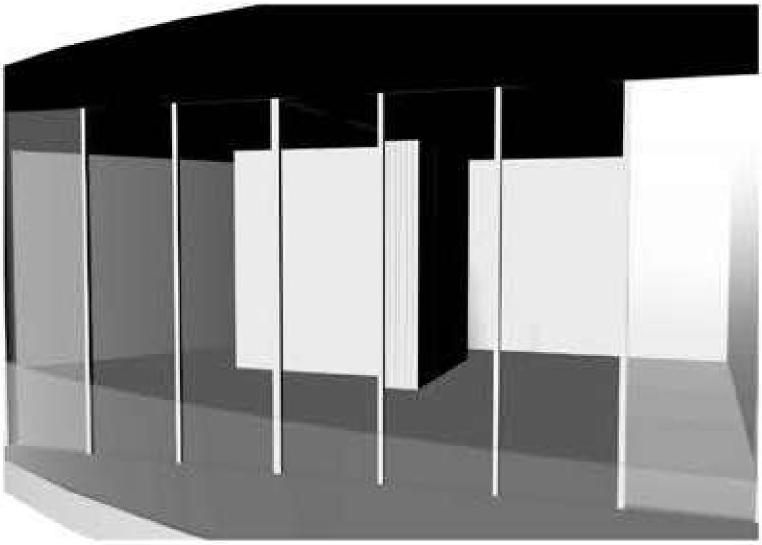


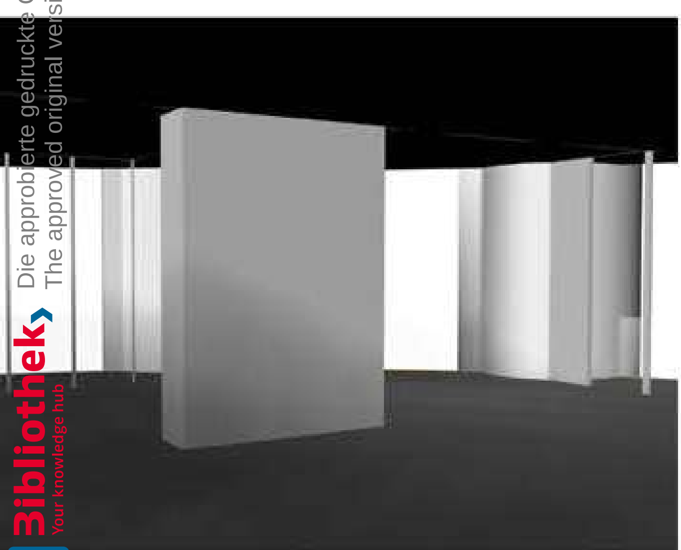


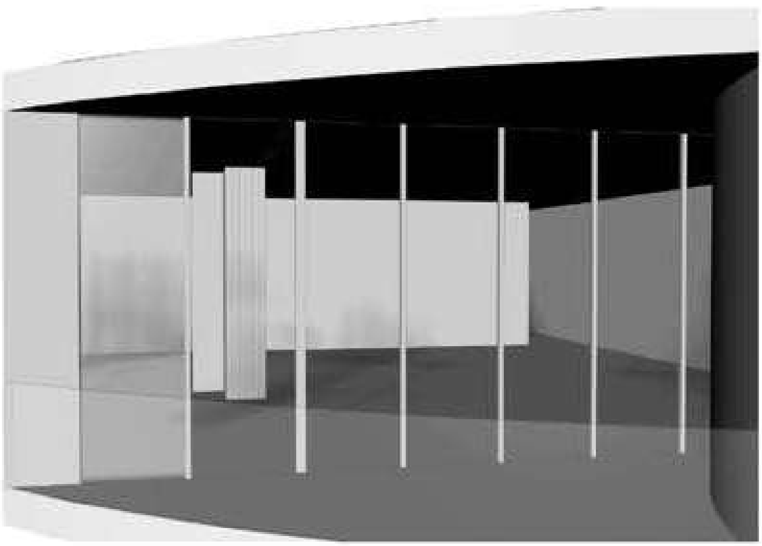
Rectangular - open



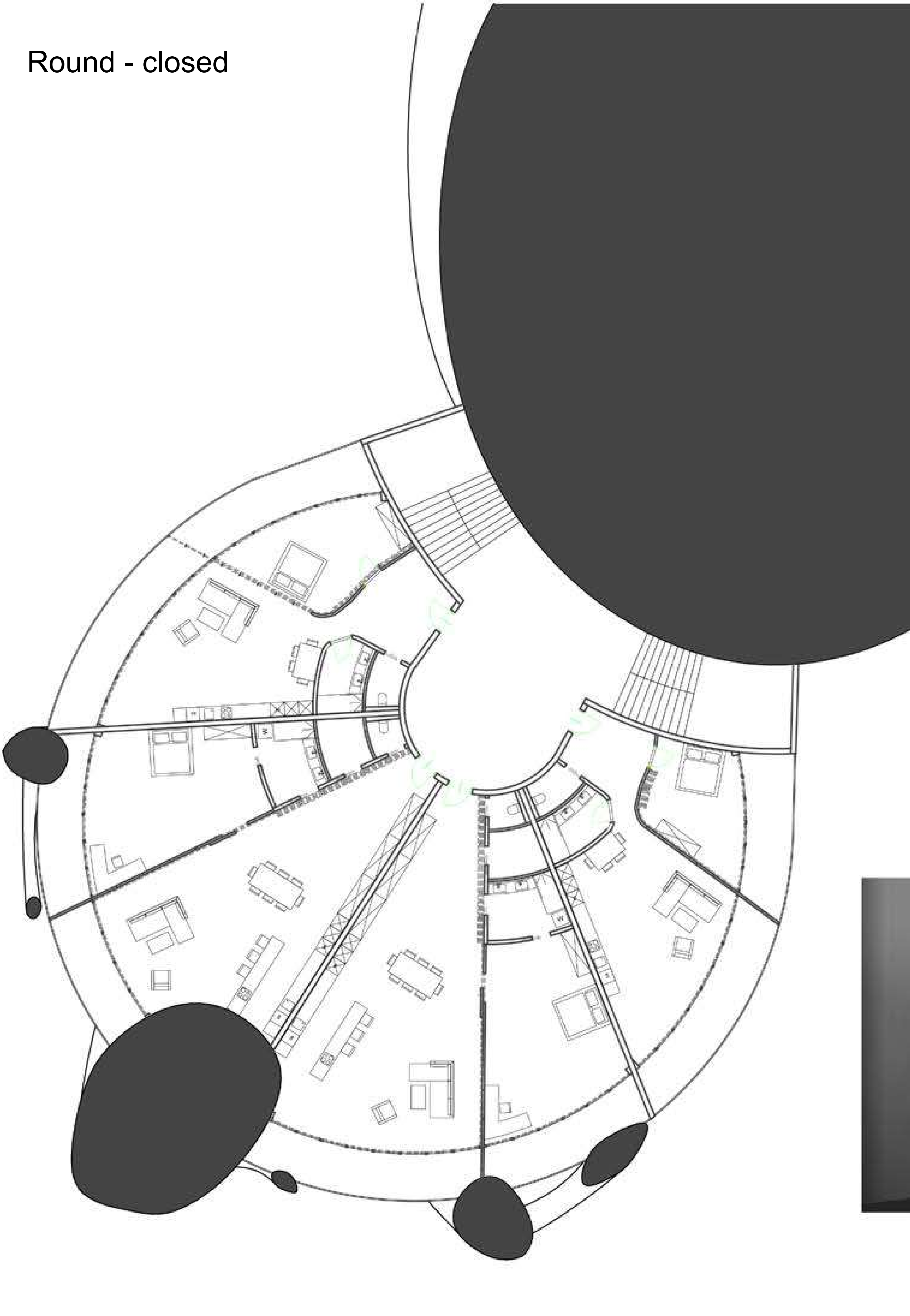


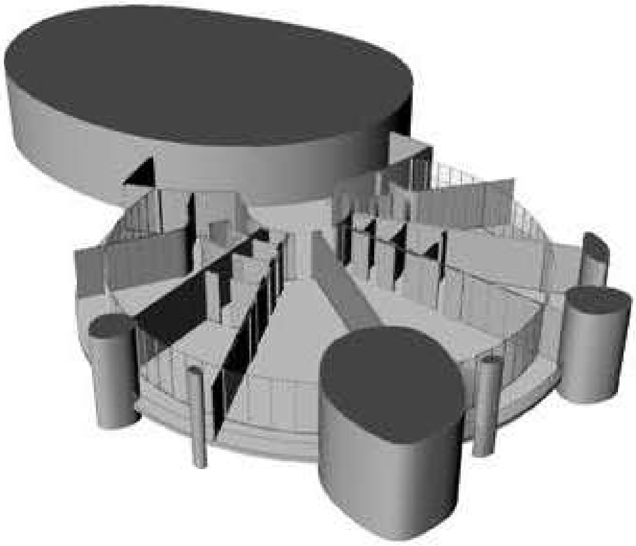


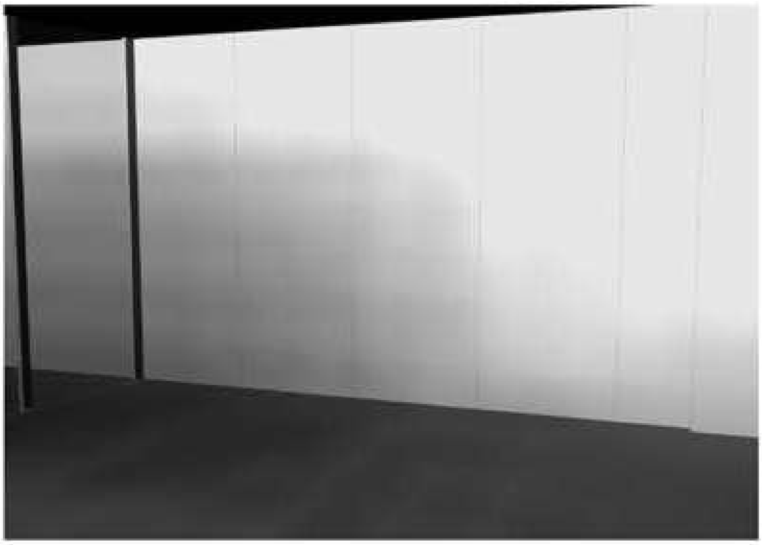


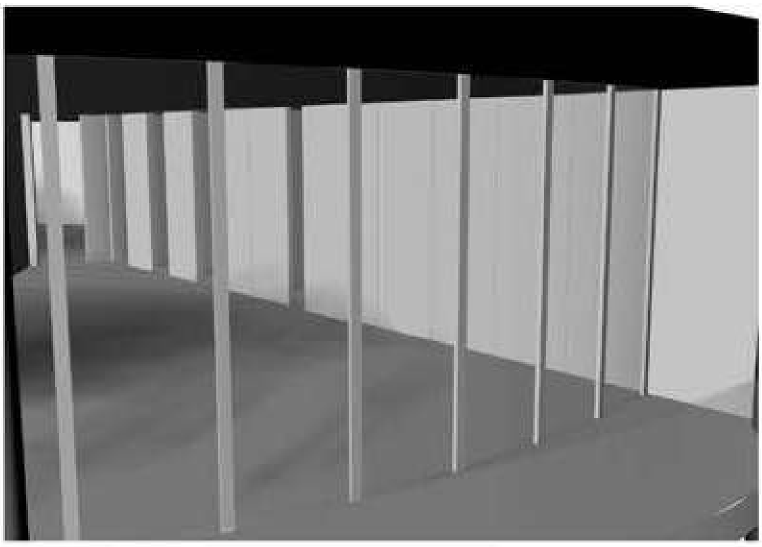


Round - closed

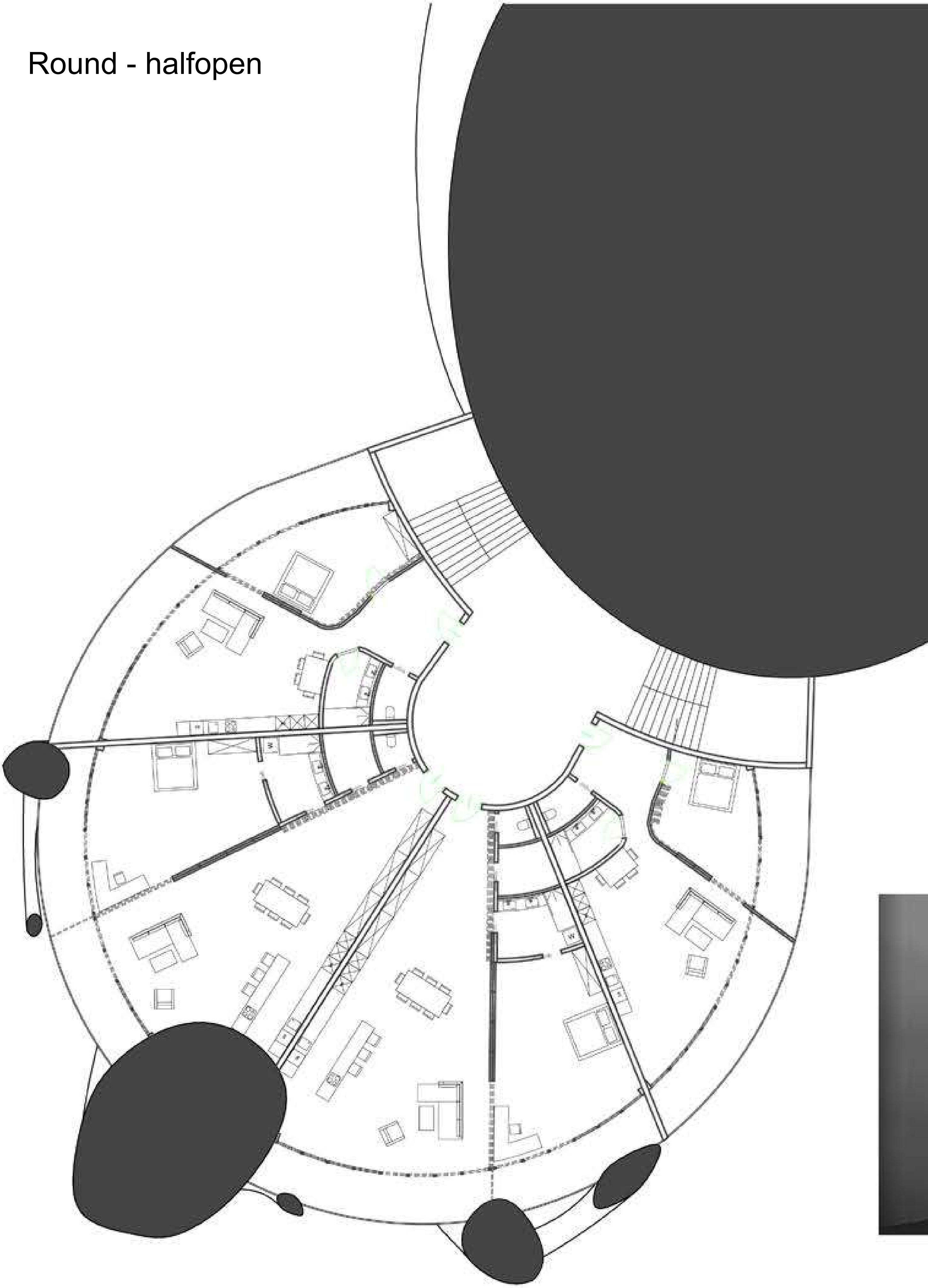


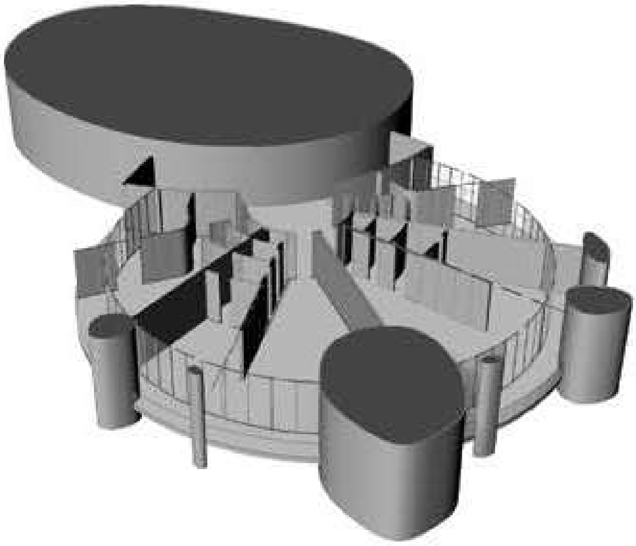


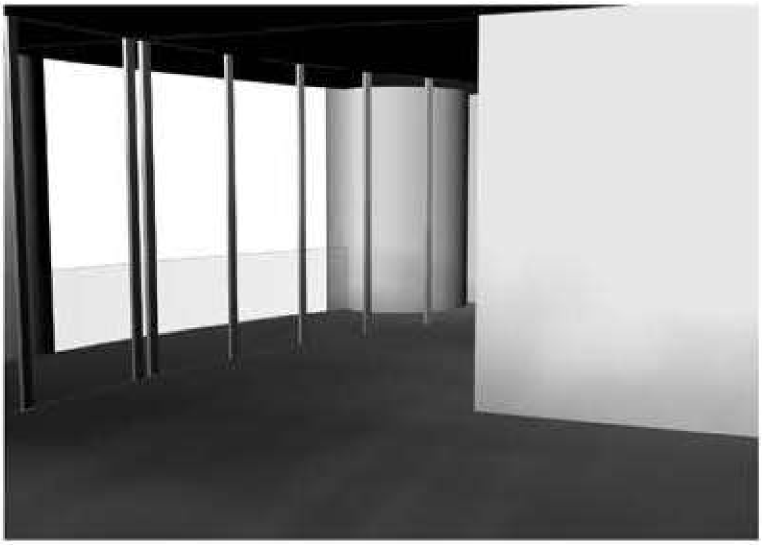


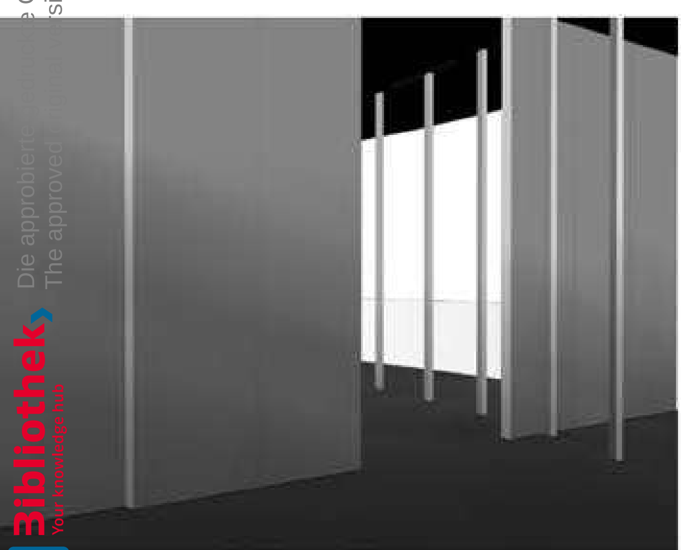


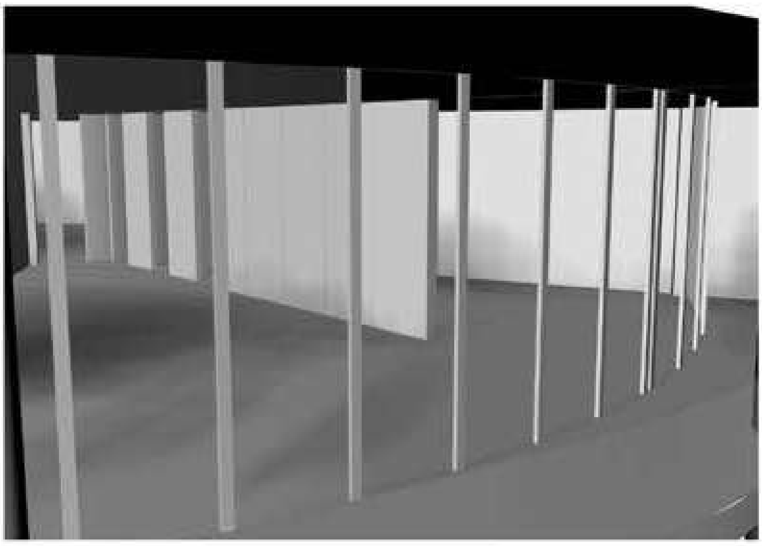
Round - halfopen



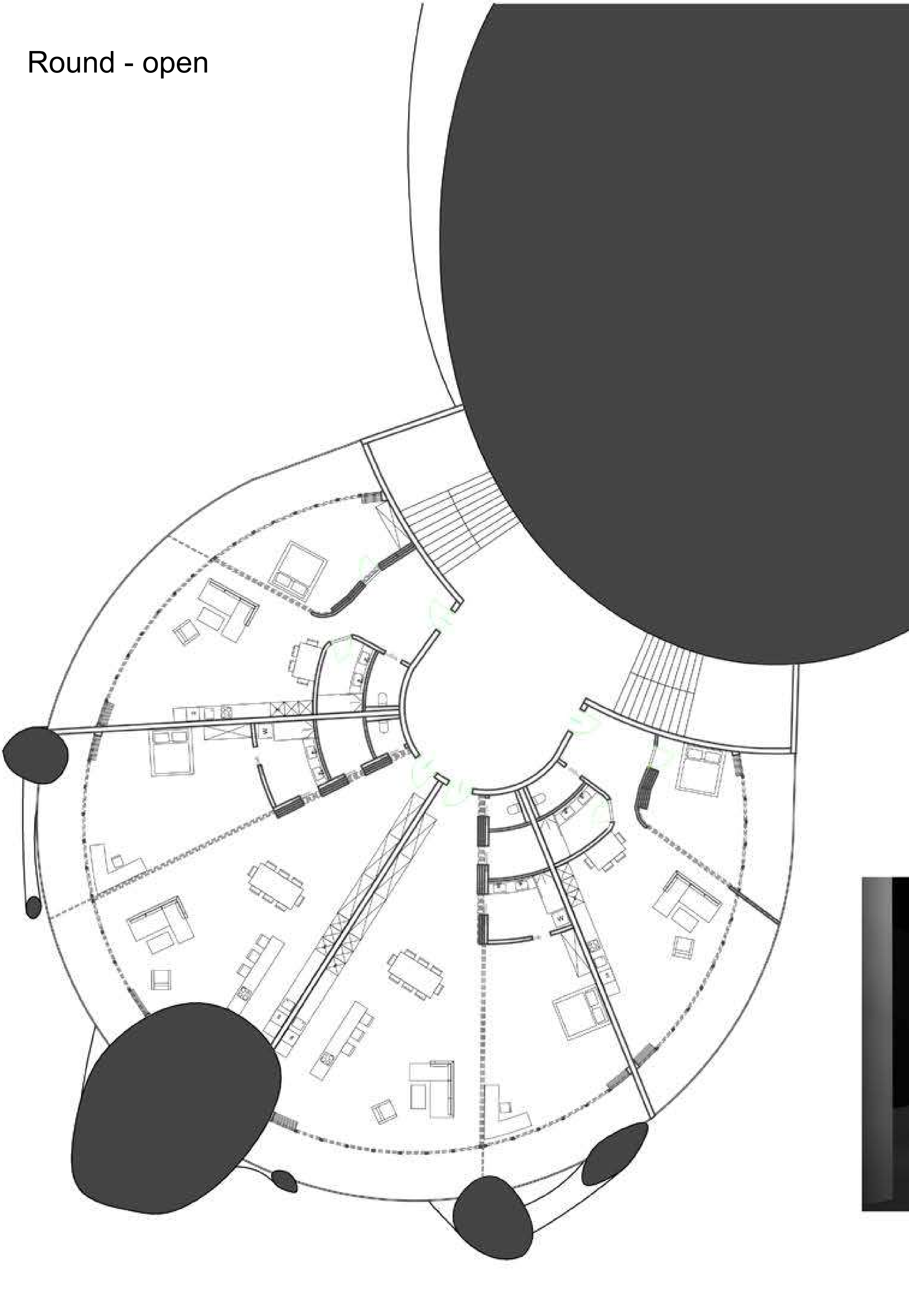


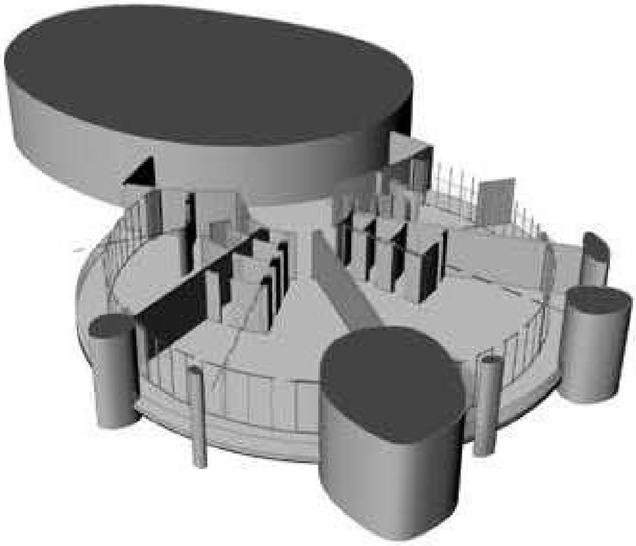


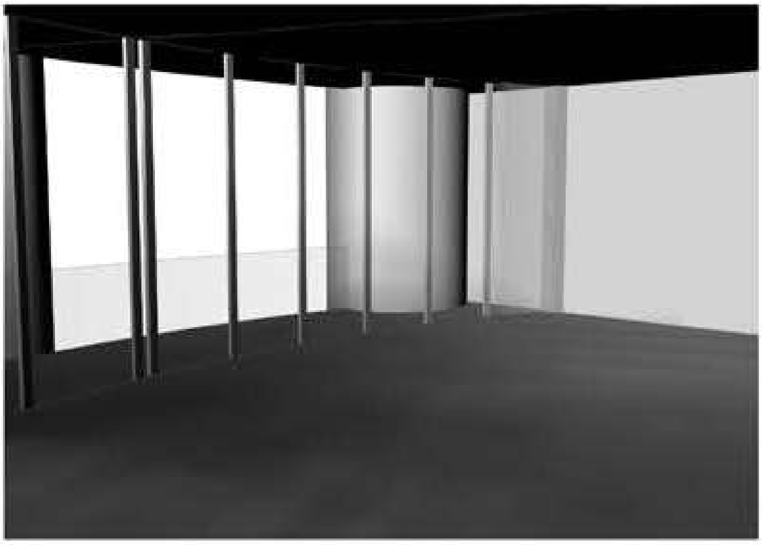


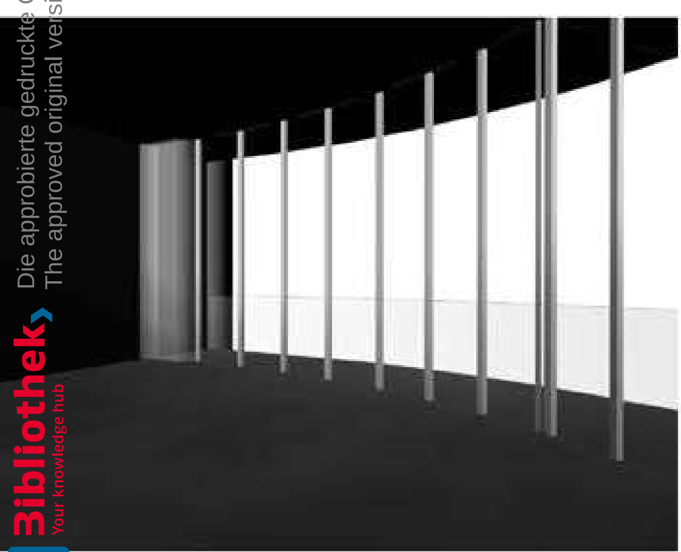


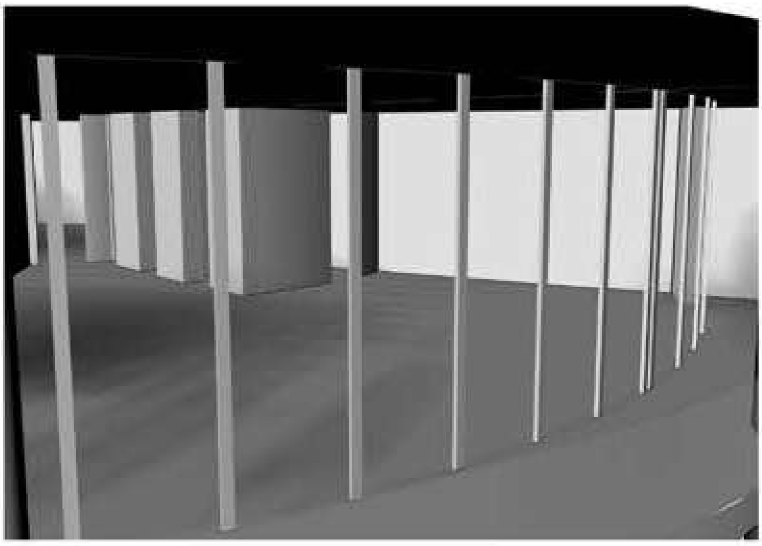
Round - open



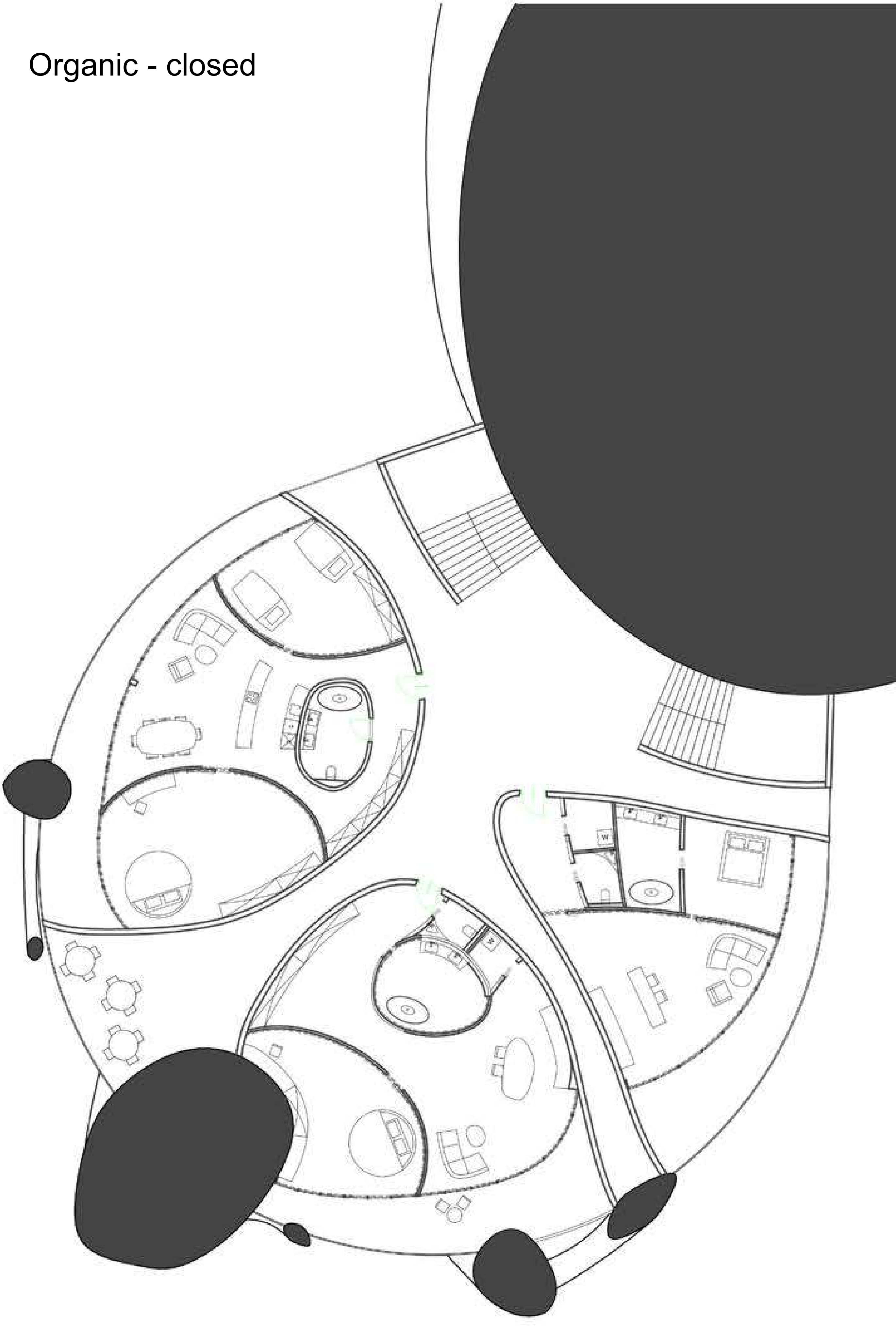


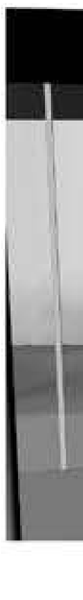


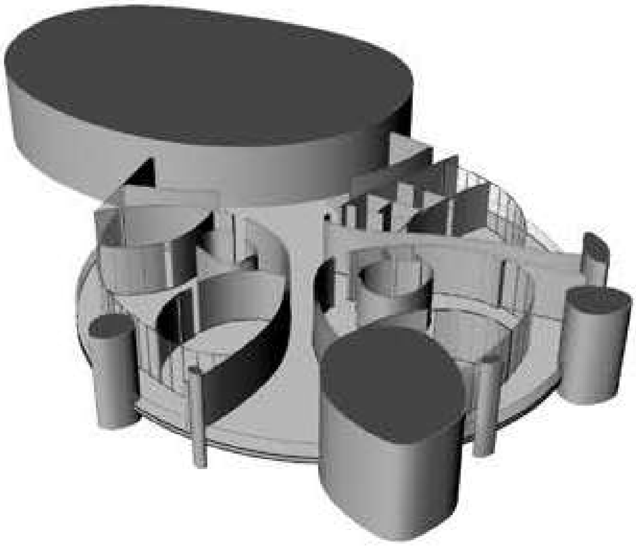


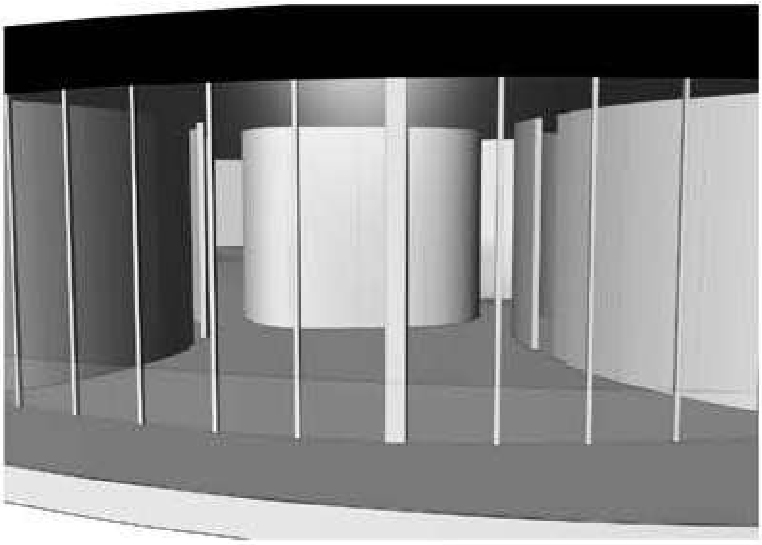


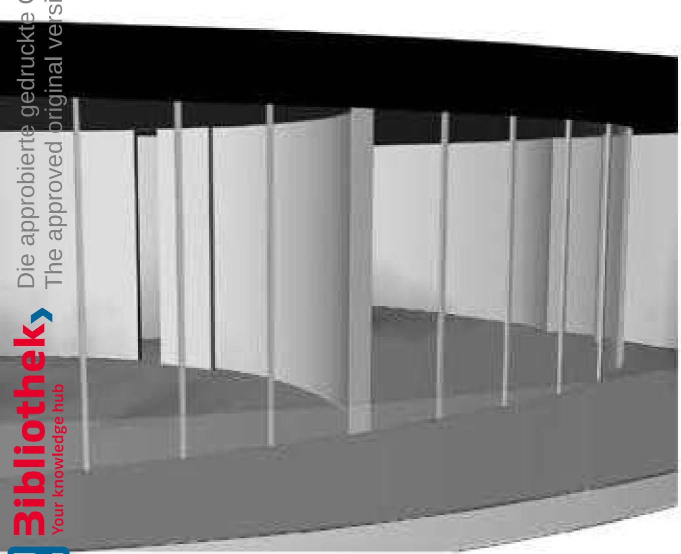
Organic - closed

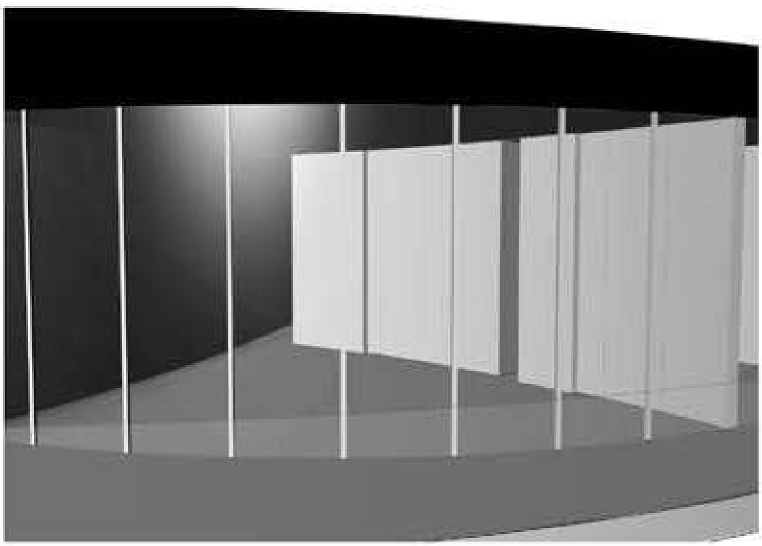




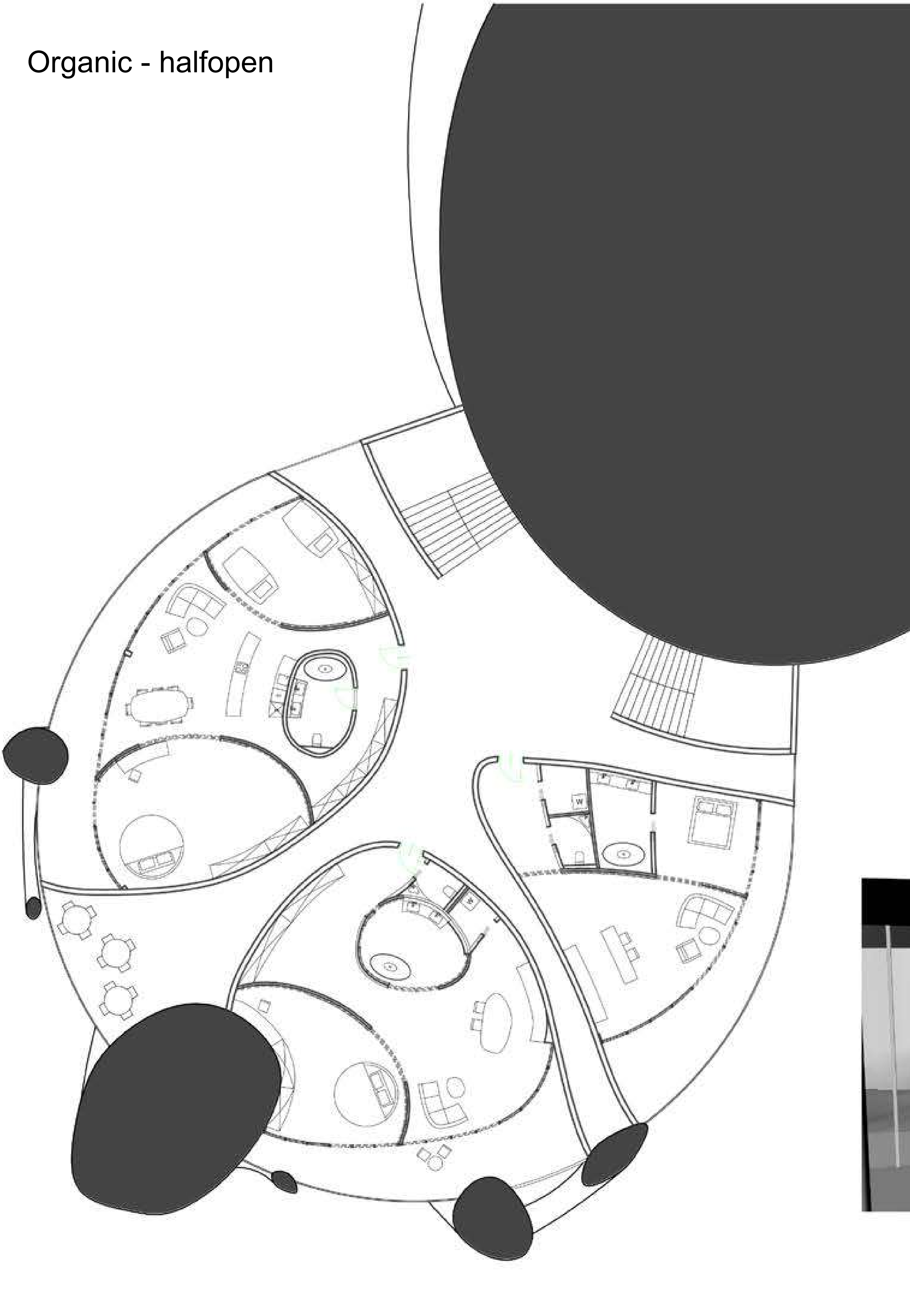


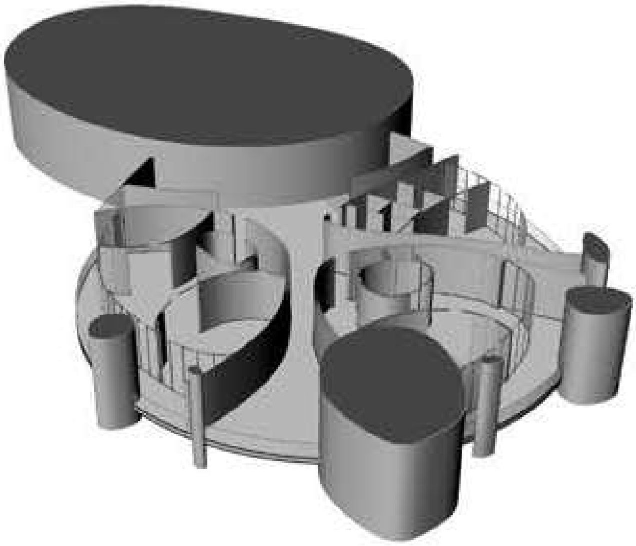


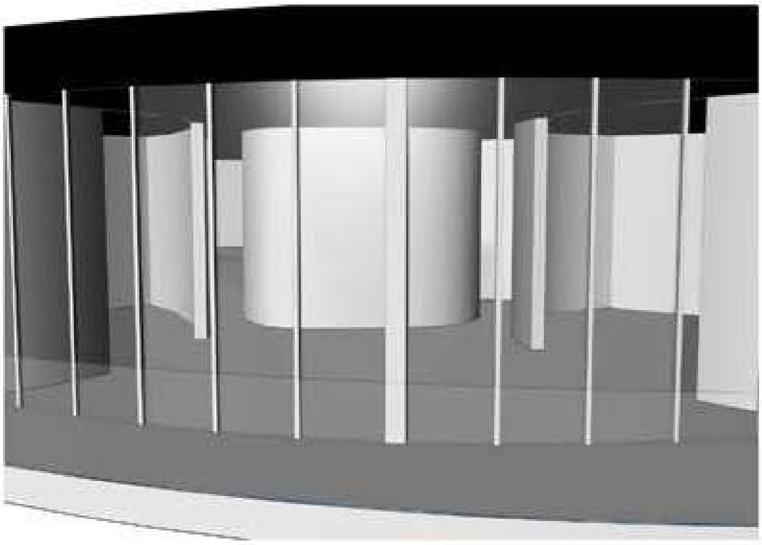


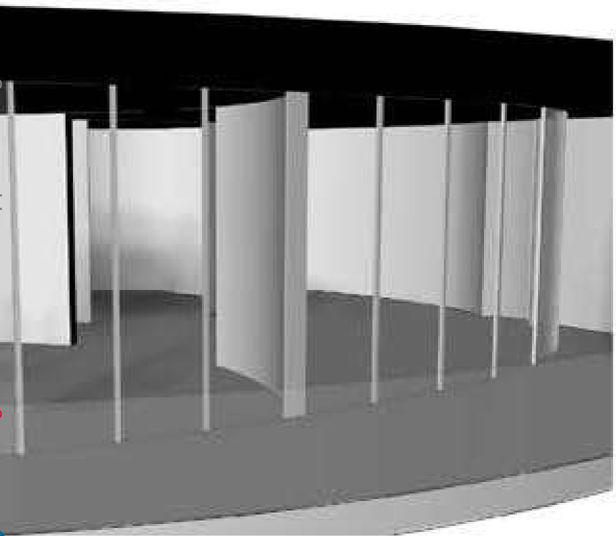


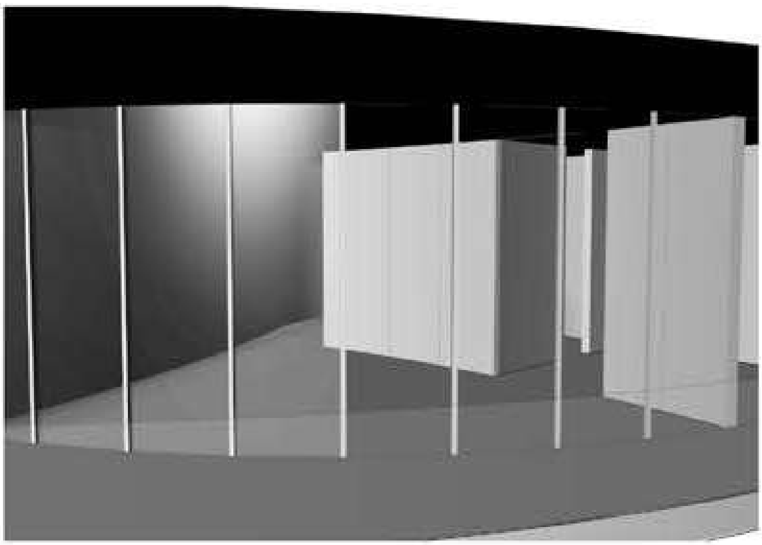
Organic - halfopen



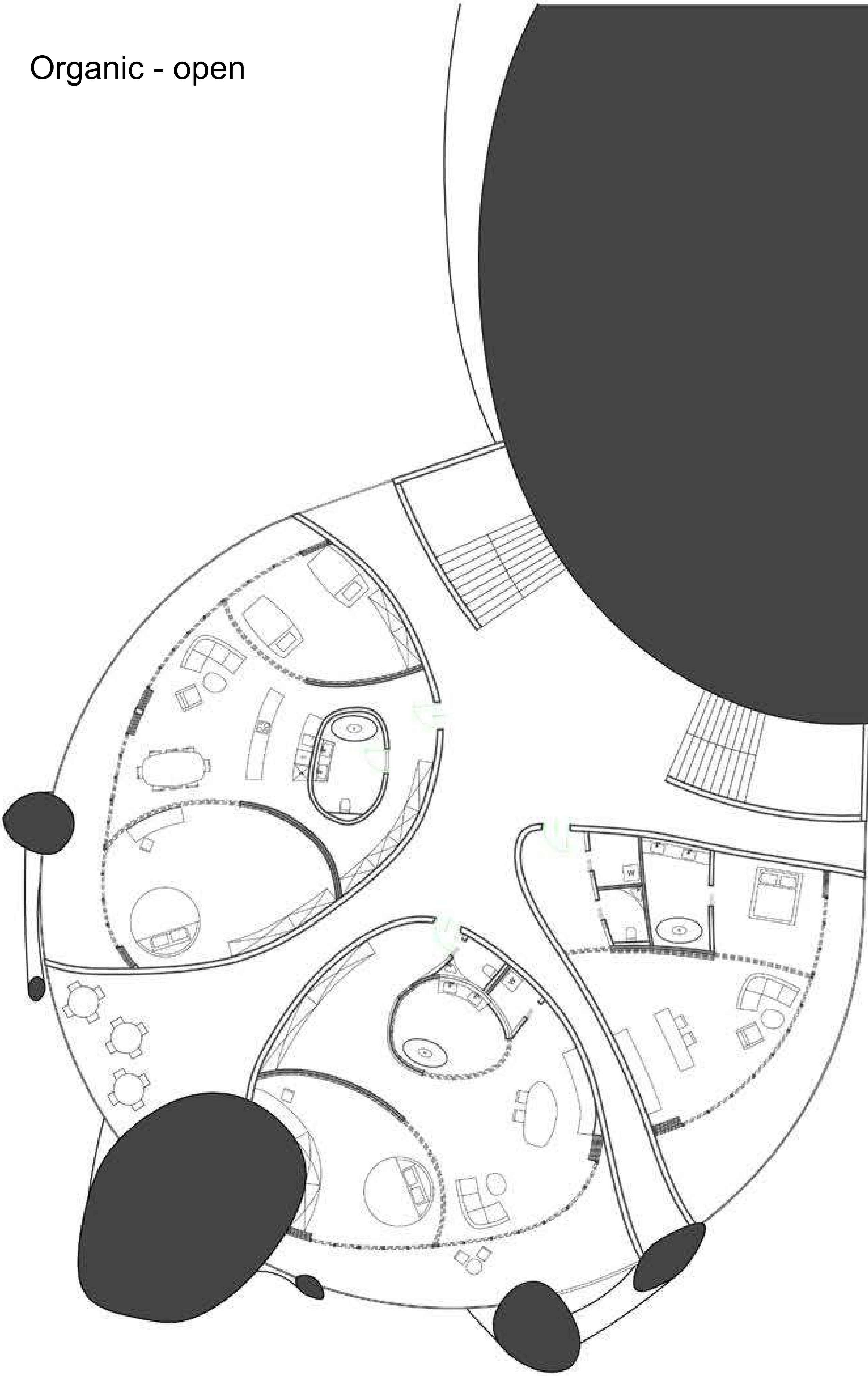


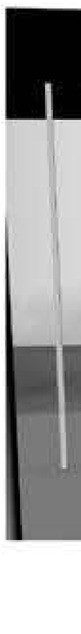


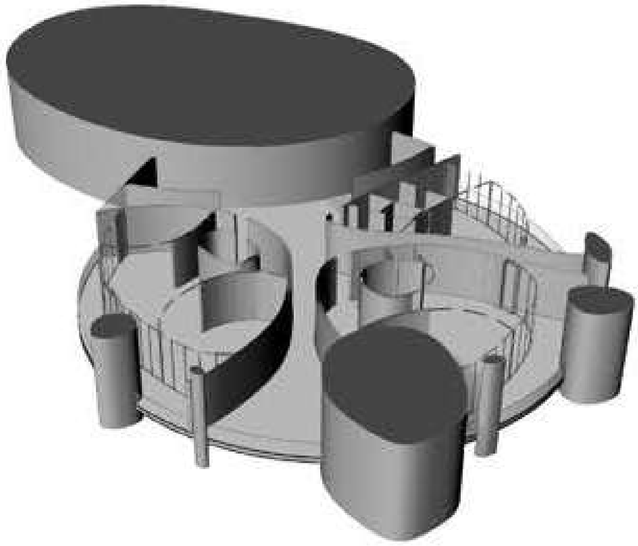


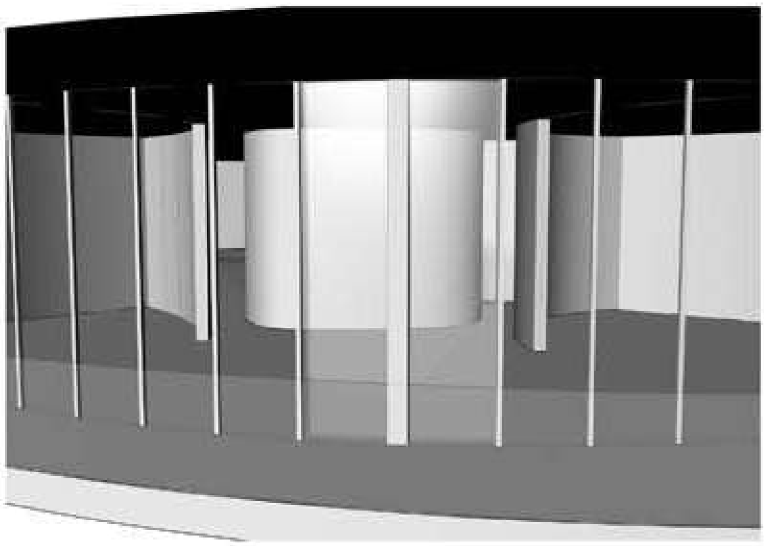


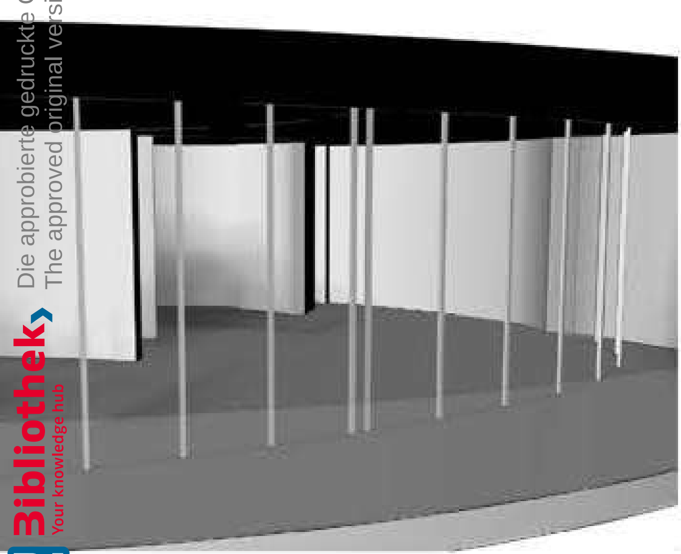
Organic - open

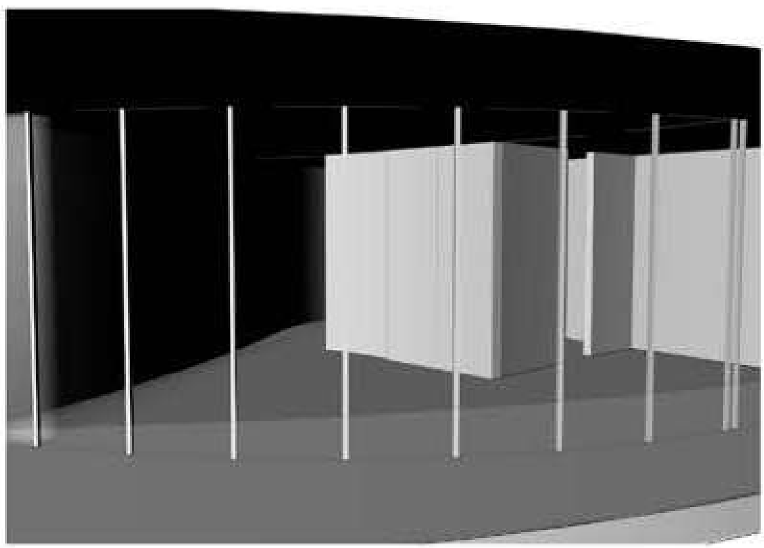




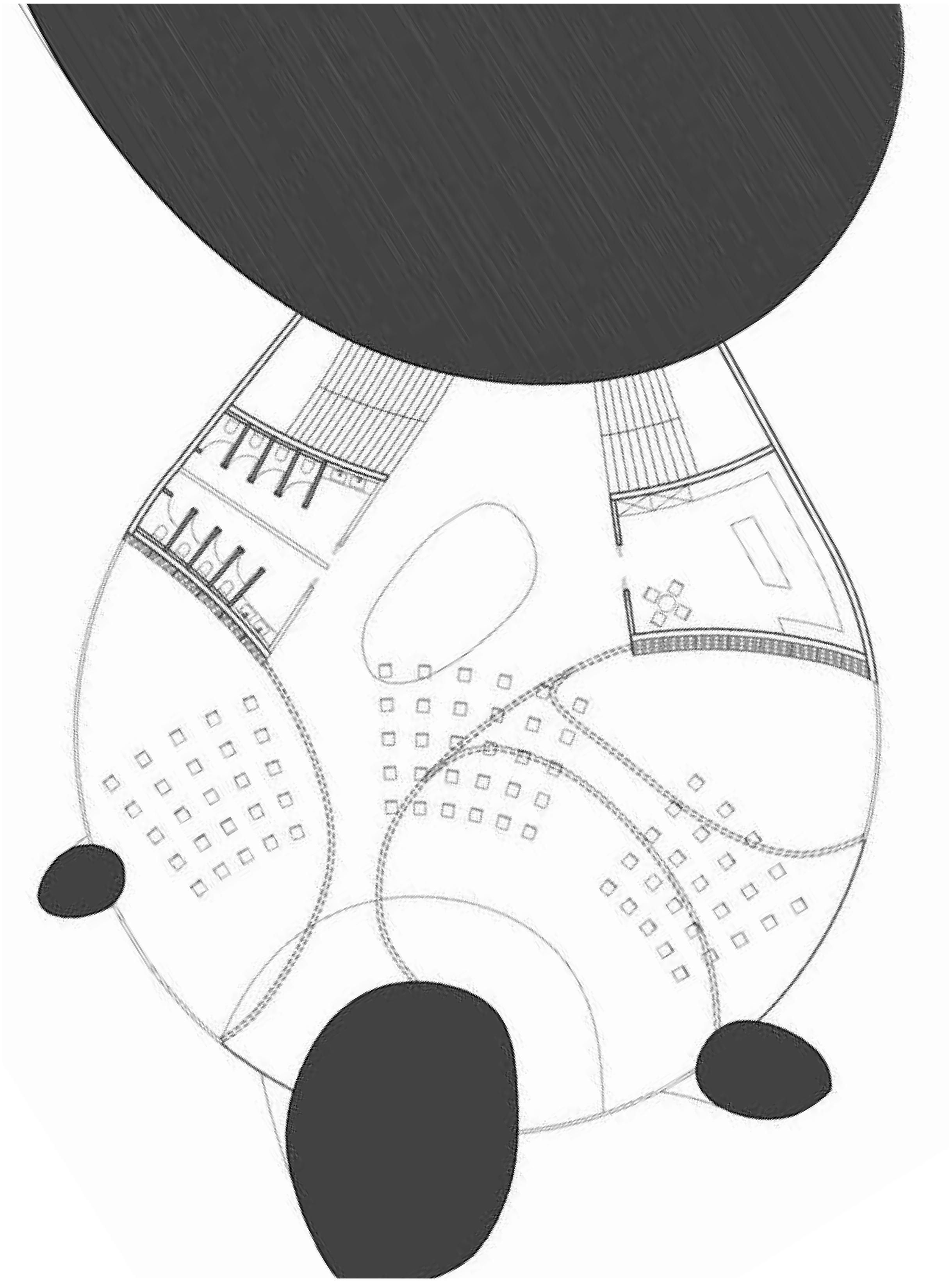




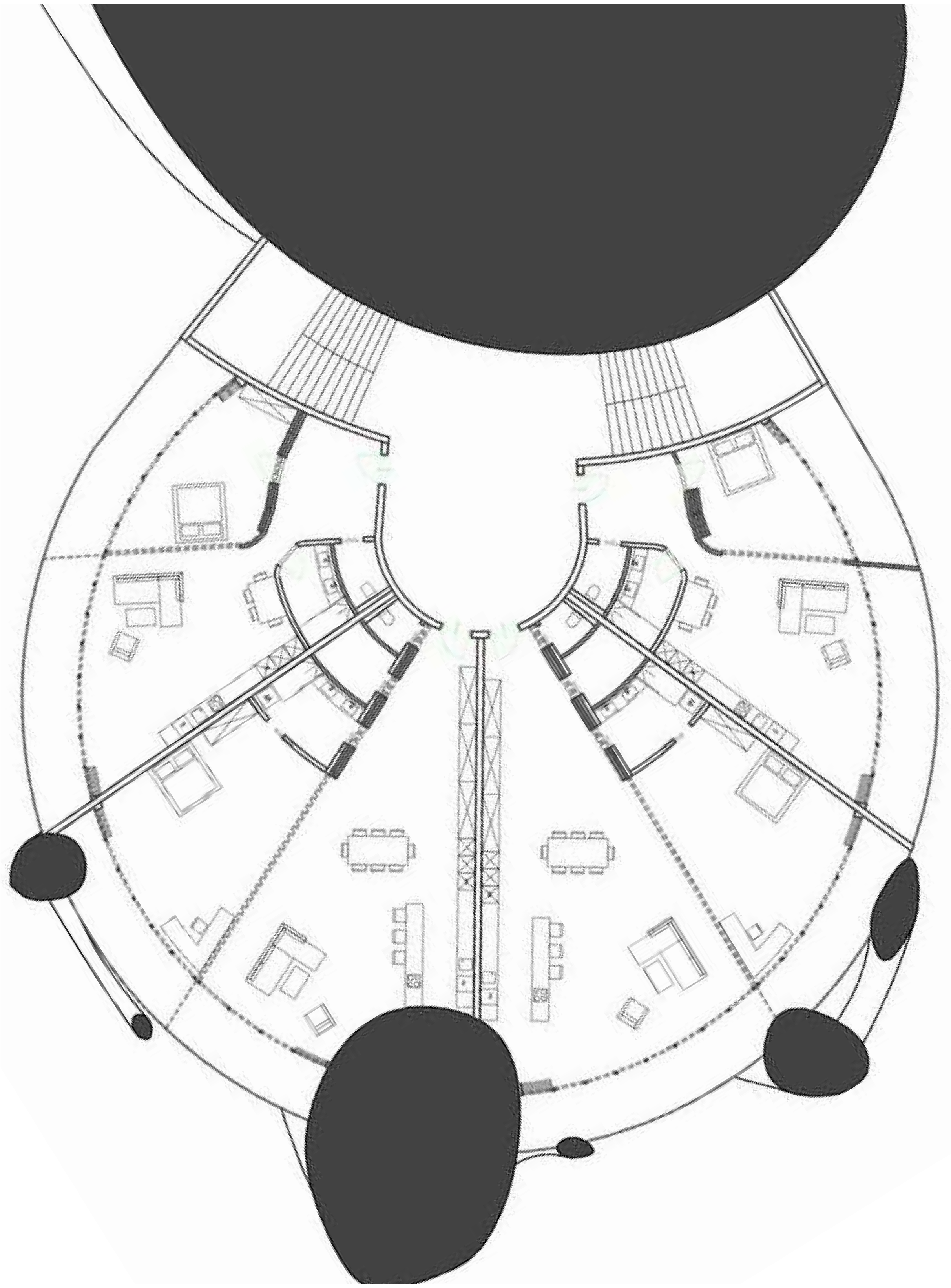




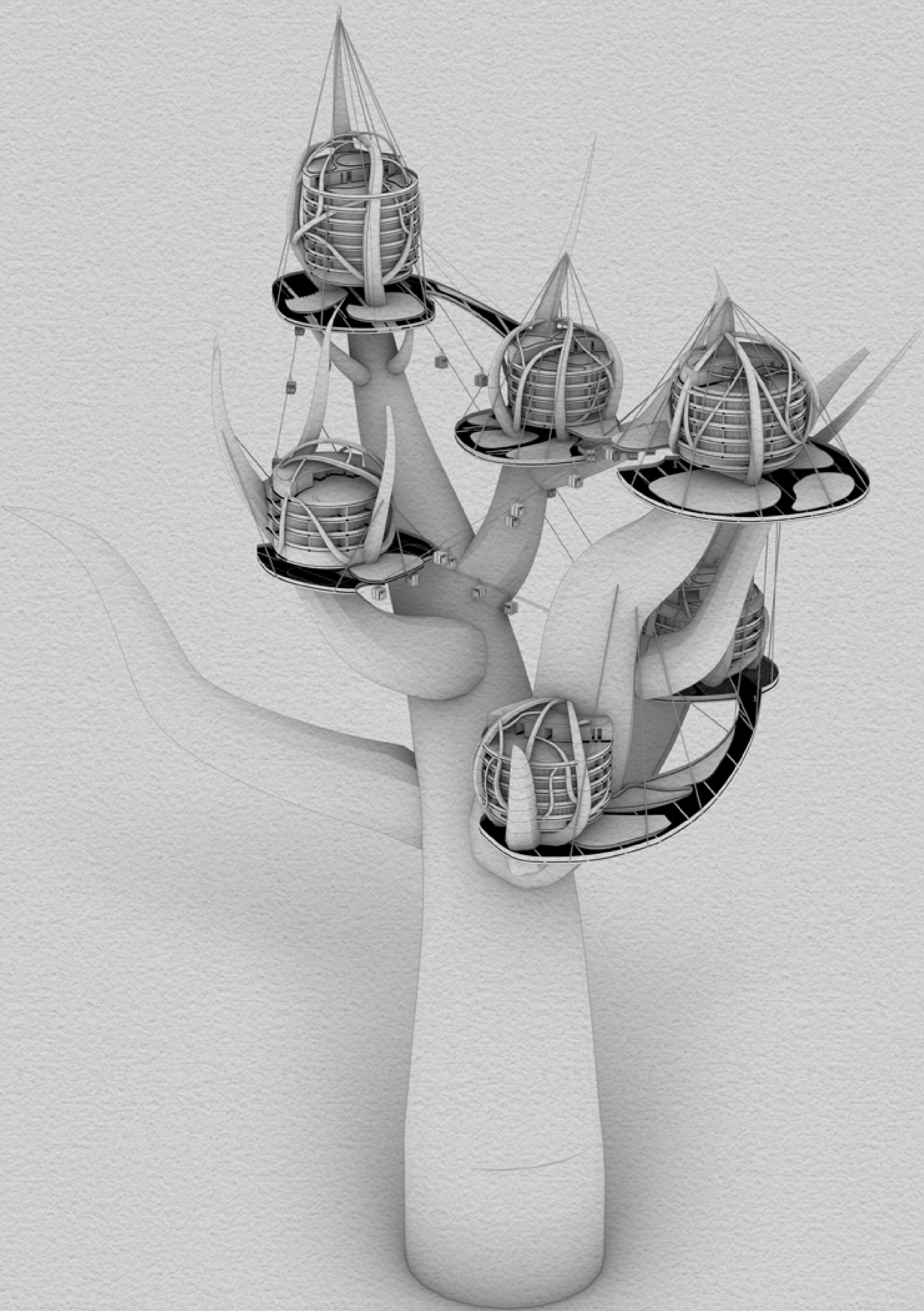
Because of the potential of enhancing peoples interaction and because of the interesting rooms that make the plan integrate better in the project, i chose the organic shape as a form of developing the ground floor and the first floor, actually the public areas of the units. With the help of the sliding walls, this form allows the floor to be completely open big space, for all kind of events and exhibits.



The upper floors however, are divided with the round shape, enabling bigger apartments and more space. The sliding walls enable the apartment to be turned in one big space inviting nature inside. The borderline between inside is outside becomes unclear as the apartment is totally submerged with nature. The mix of these two floor concepts, represent the plans of all of the units on the project.



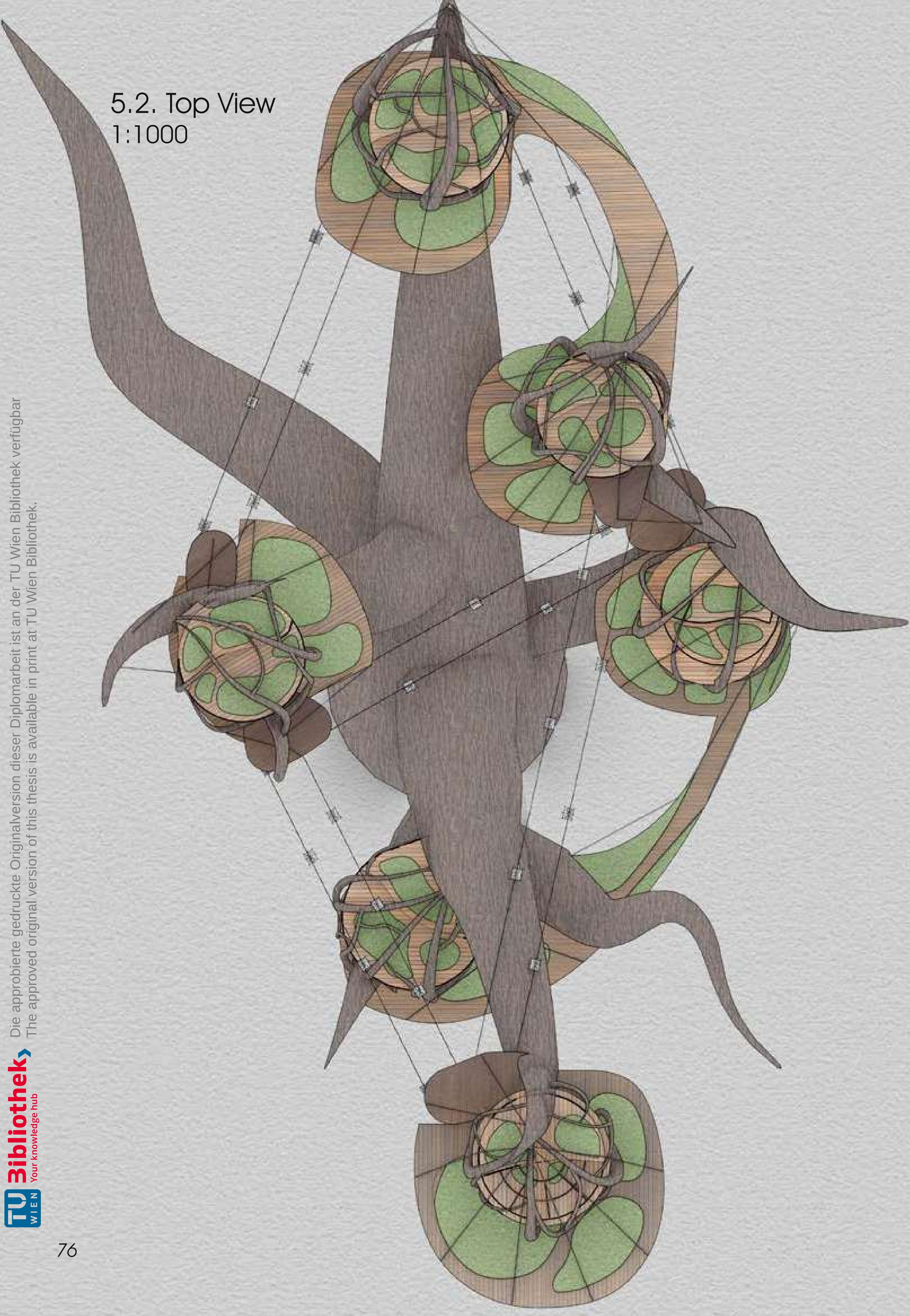
5. Results



5.1. Site Plan

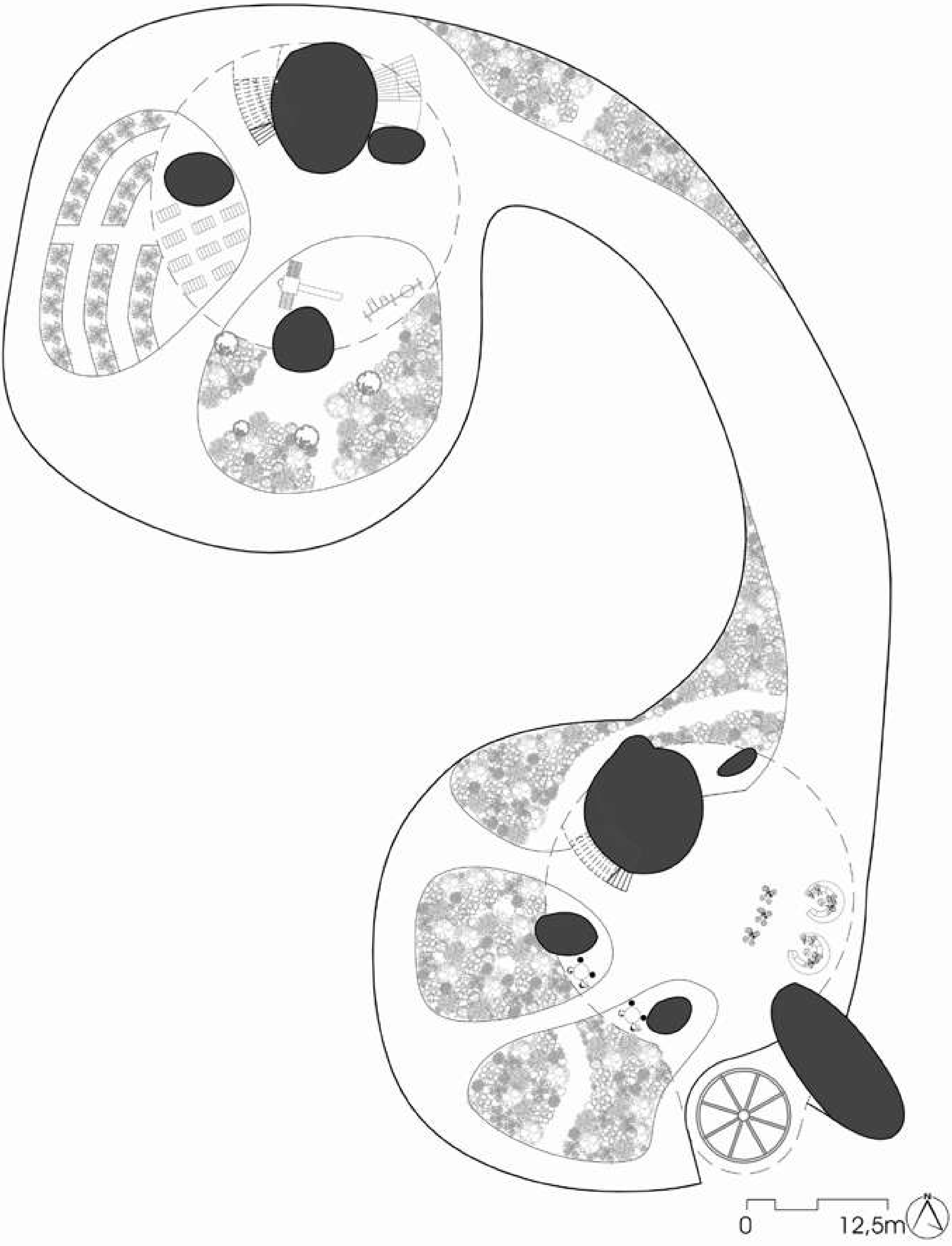

evel
evel
DMS: 36° 33' 6.67738"
- 118° 45' 50.92345"
1:3000
0 30m 75m 150m
N

5.2. Top View
1:1000



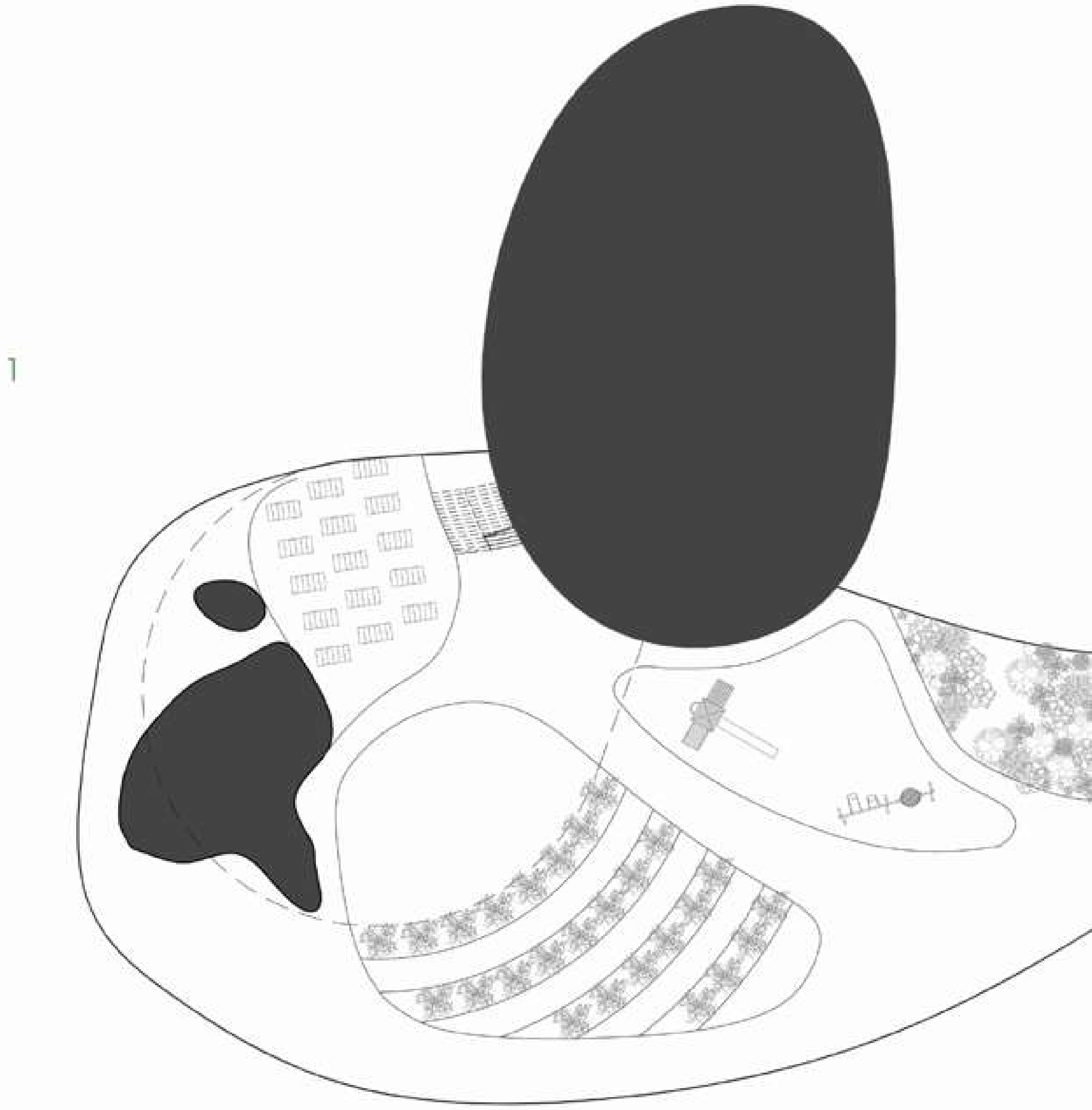
5.3. Plans

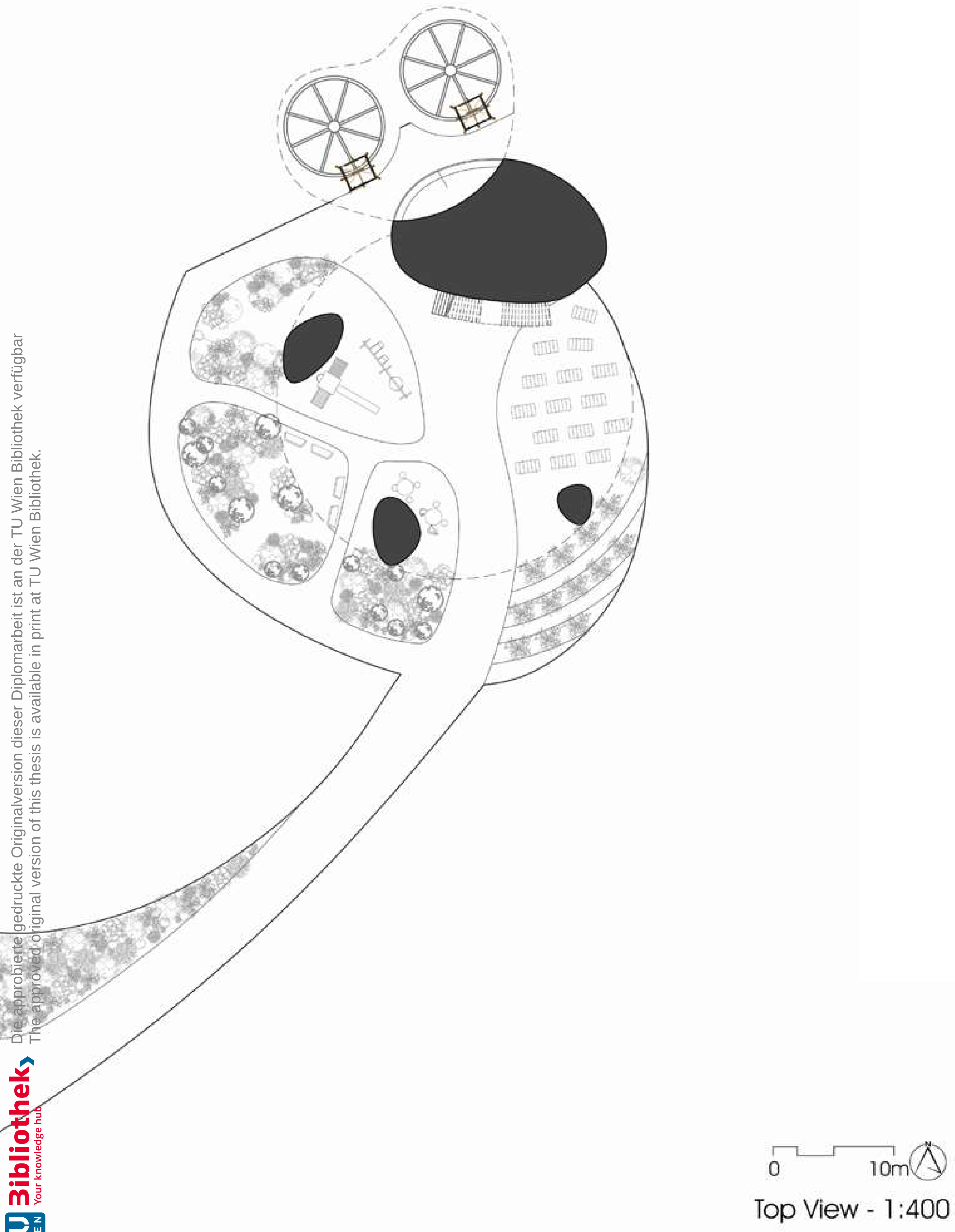
Bridge 1



Top View - 1:500

Bridge 2

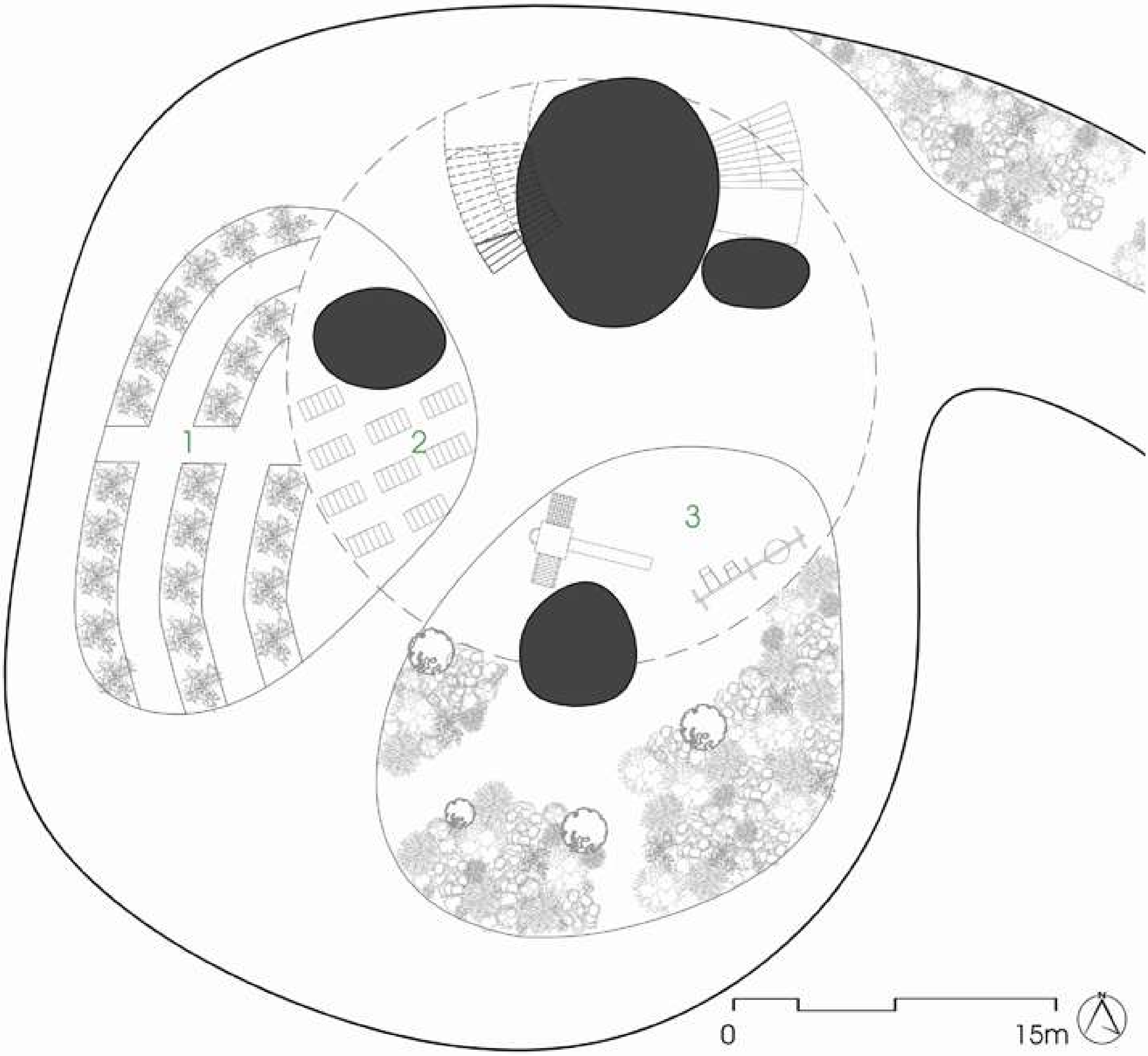



0
10m
Top View - 1:400

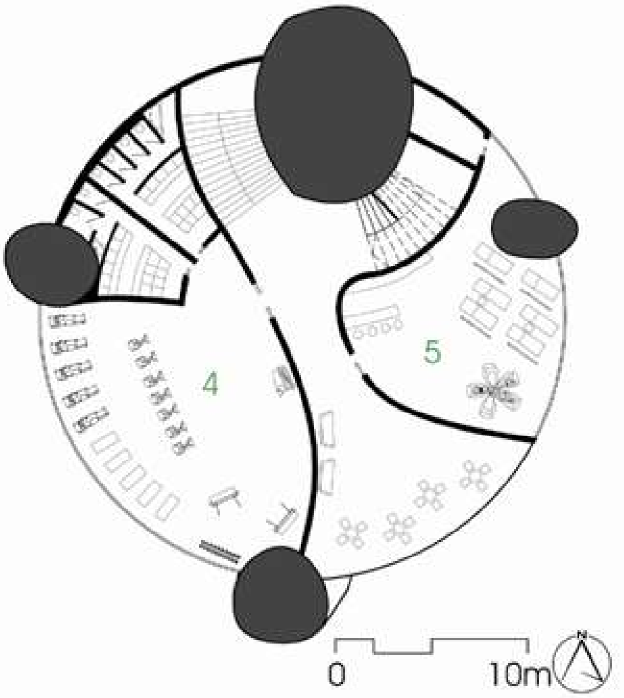
5.3 Plans

Bulidng 1

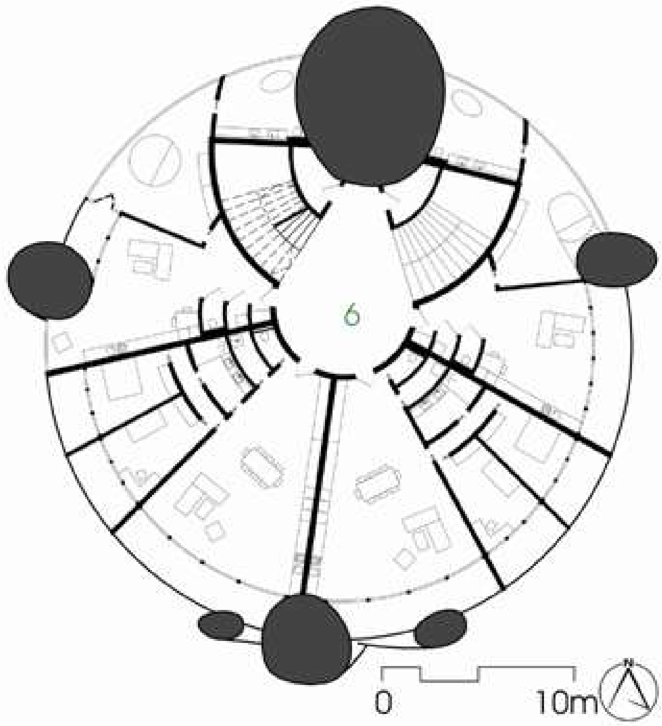
1 - Urban Farming
2 - Bio Market
3 - Playground
4 - Gym
5 - Wellness Center
6 - Apartmants
7 - Lounge
8 - Roof Garden



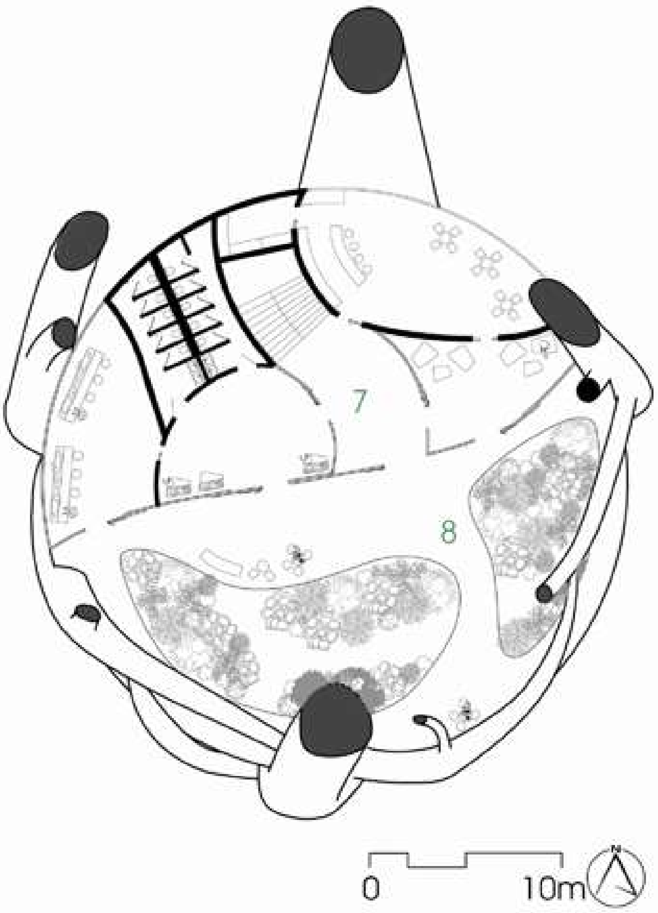
Ground Floor - 1:300



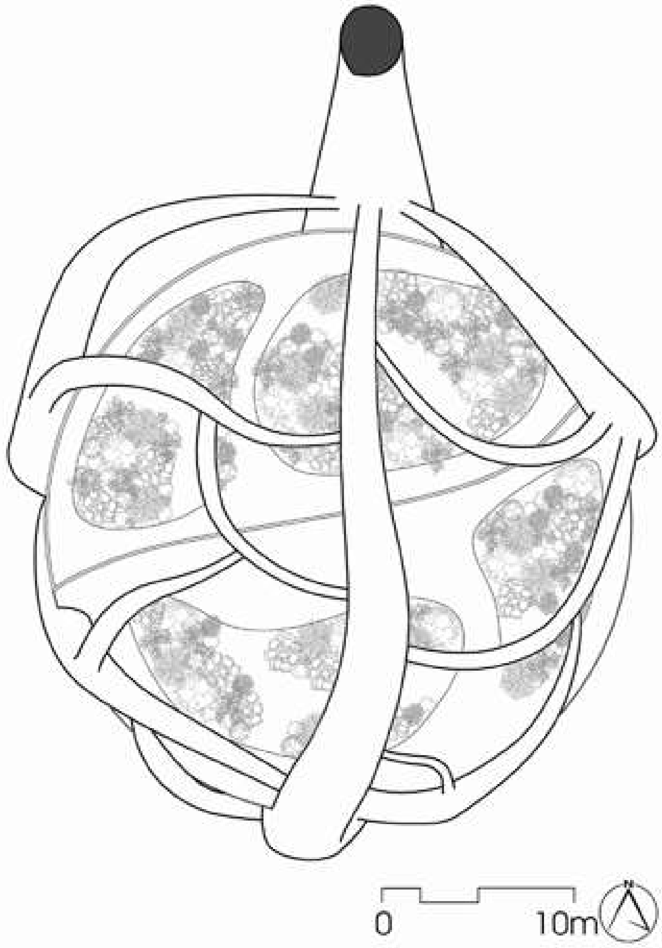
First Floor - 1:400



Standard Floor - 1:400



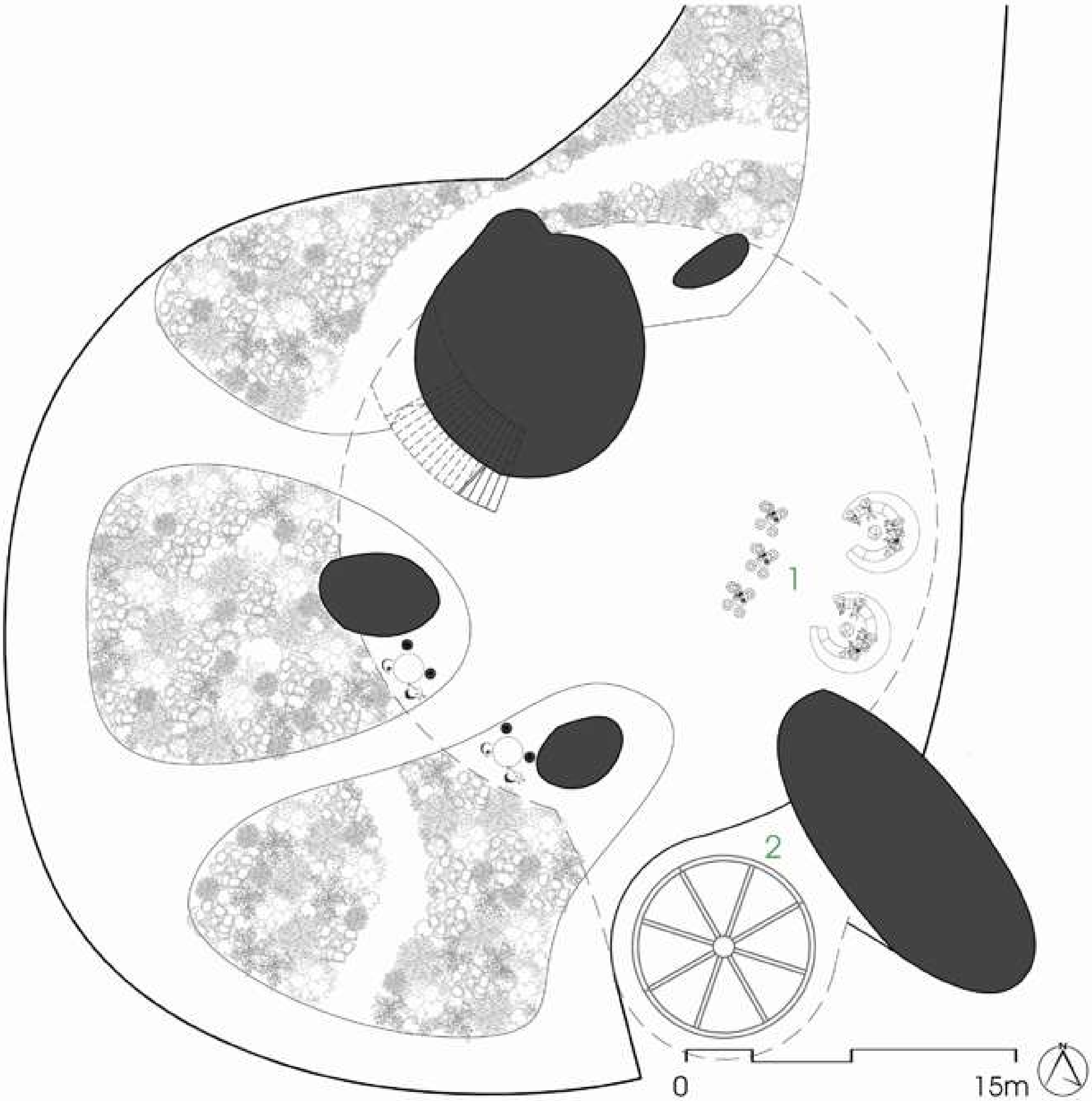
Top Floor - 1:400



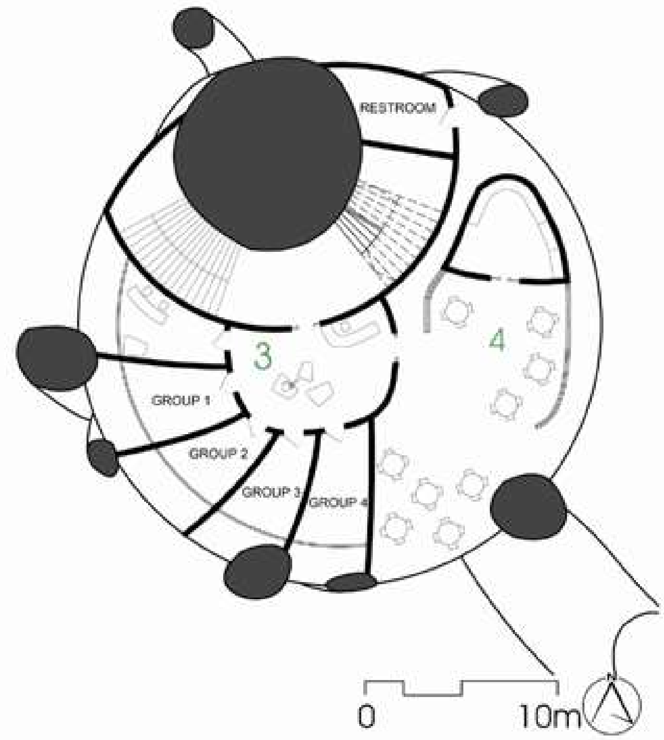
Top View - 1:400

Bulidng 2

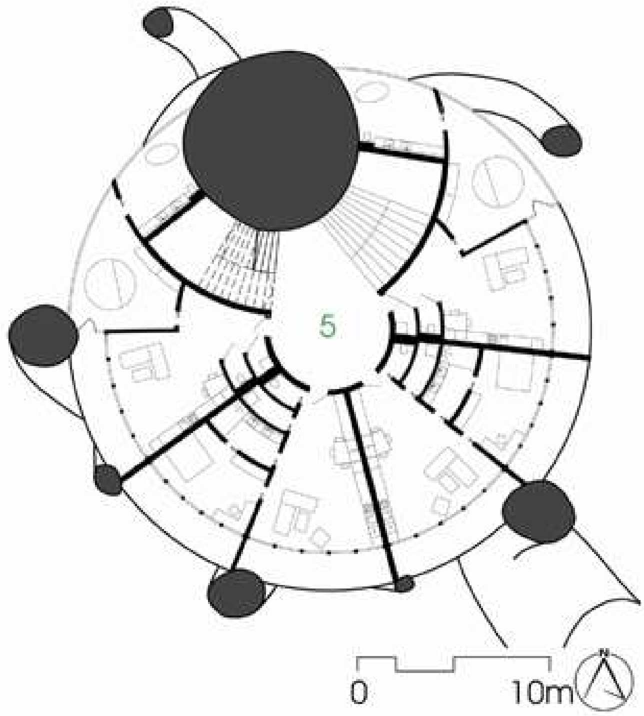
1 - Meeting Area
2 - Cable Car Station
3 - Kindergarten
4 - Bar
5 - Apartmants
6 - Lounge
7 - Roof Garden



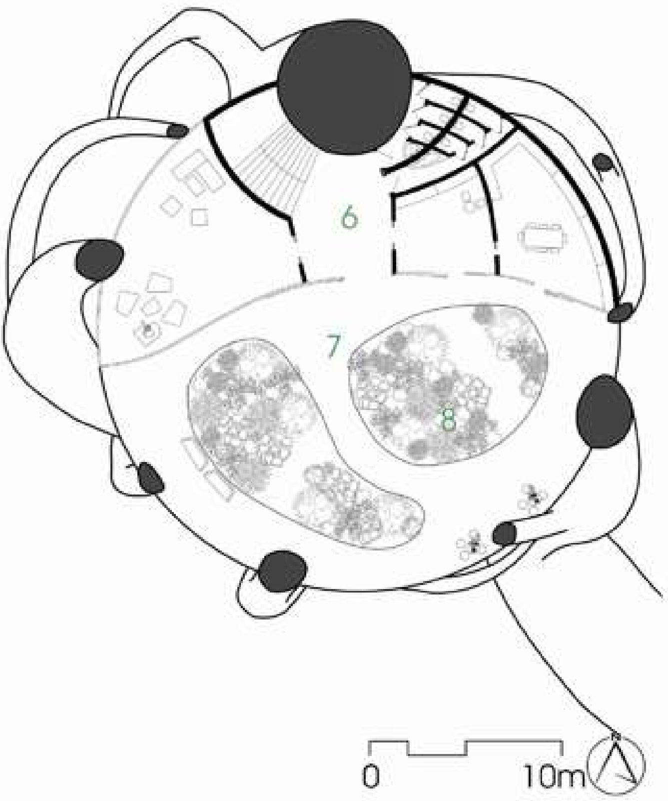
Ground Floor - 1:300



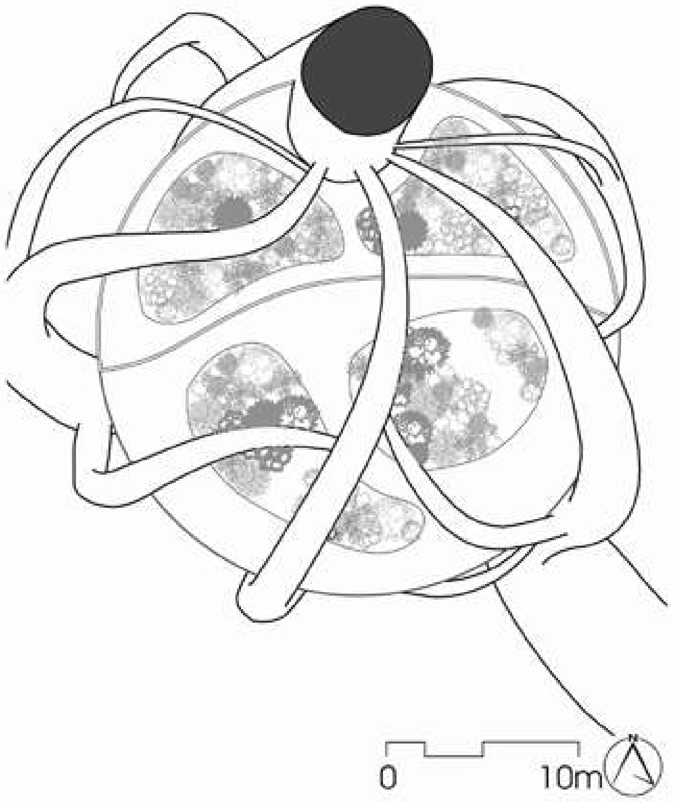
First Floor - 1:400



Standard Floor - 1:400



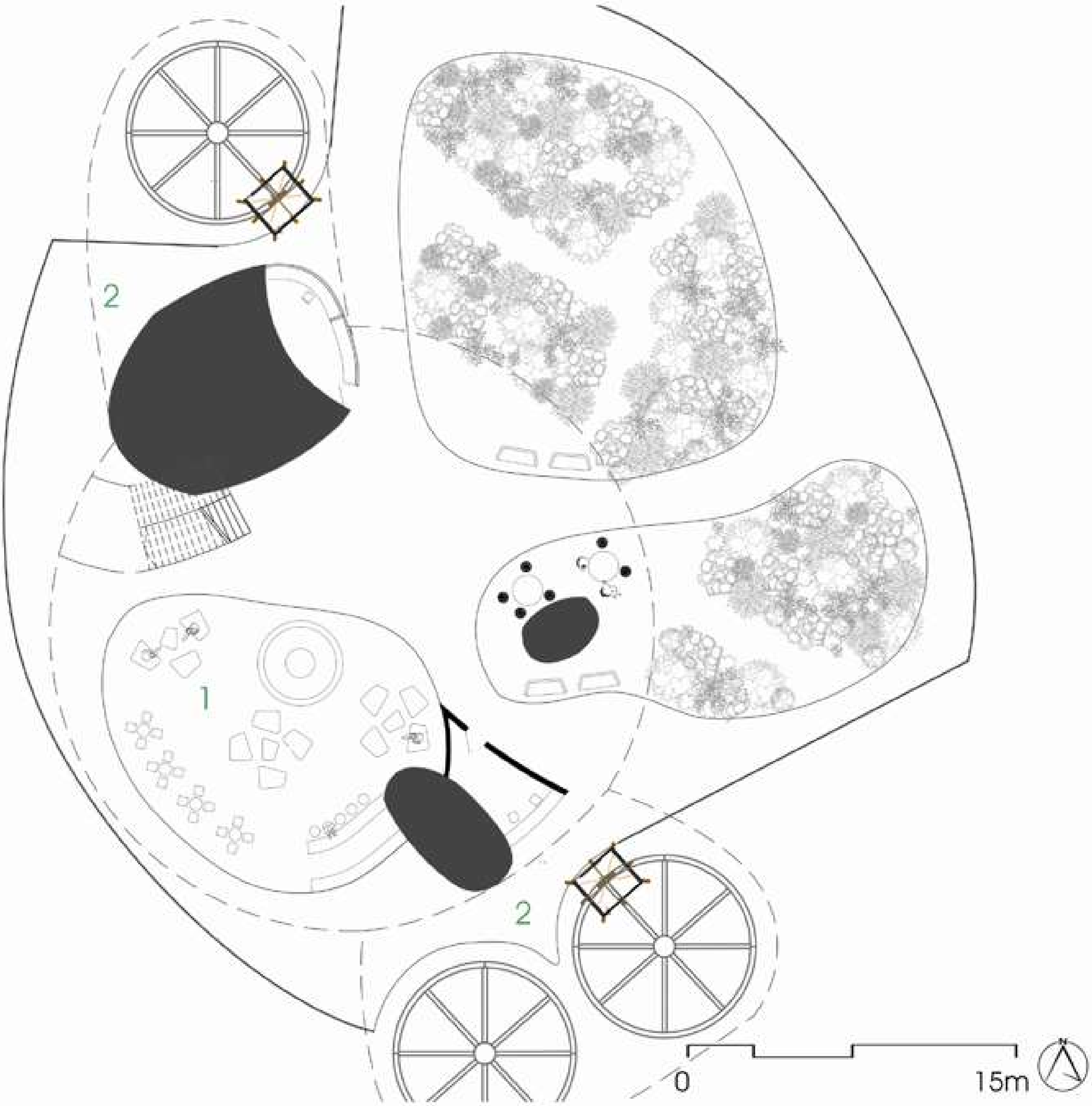
Top Floor - 1:400



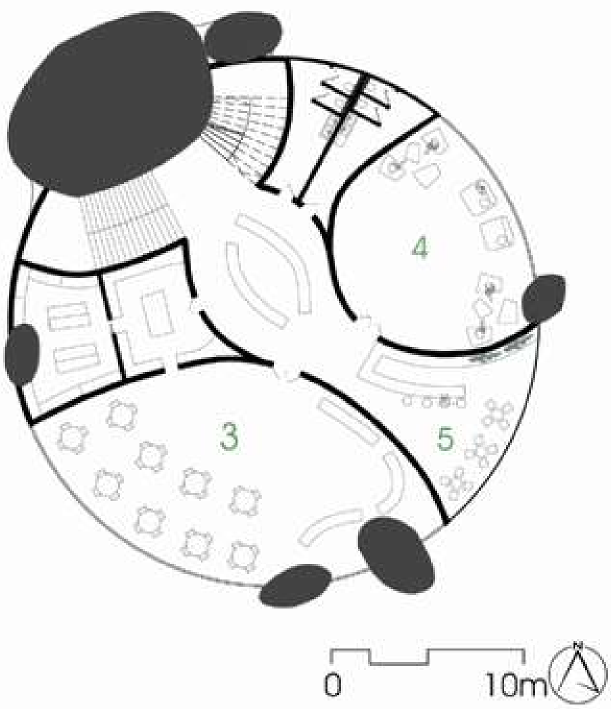
Top View - 1:400

Bulidng 3

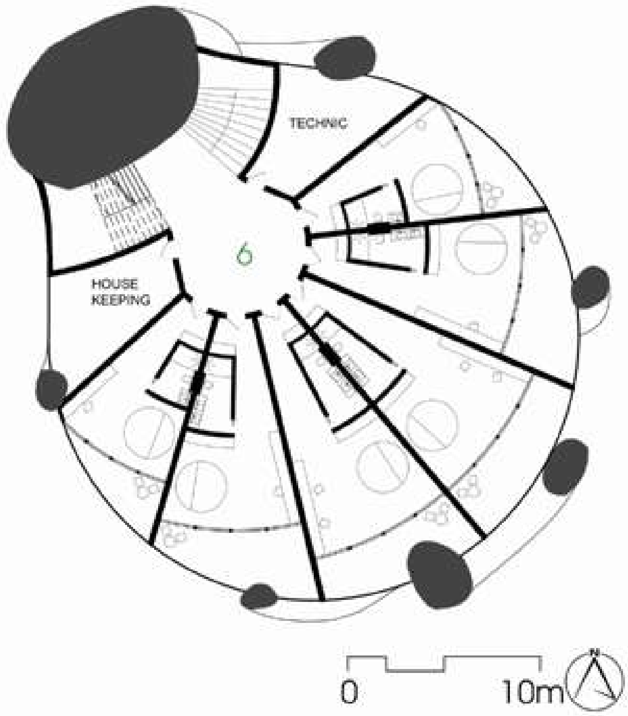
1 - Bar
2 - Cable Car Stations
3 - Restaurant
4 - Lounge
5 - Bar
6 - Hotel Rooms
7 - Common Room
8 - Roof Garden



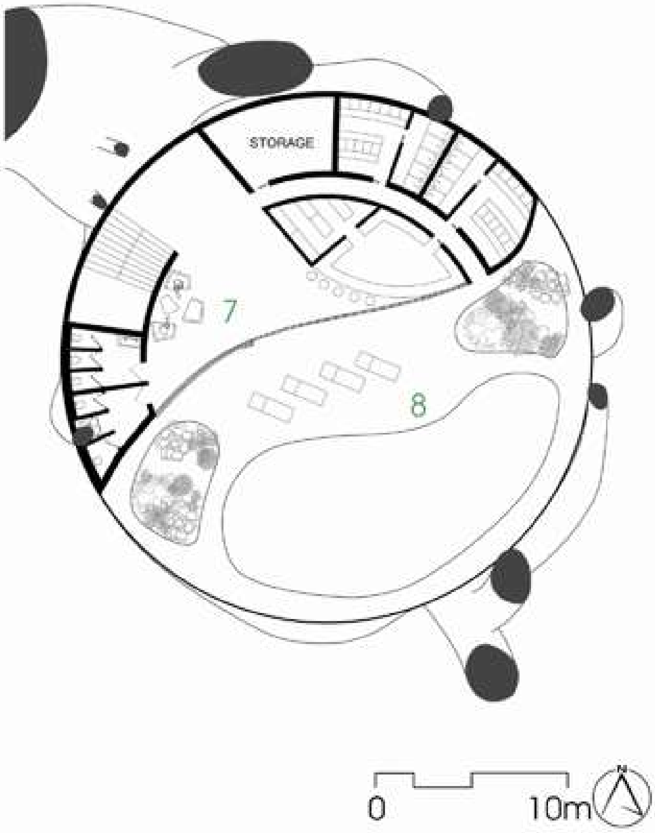
Ground Floor - 1:300



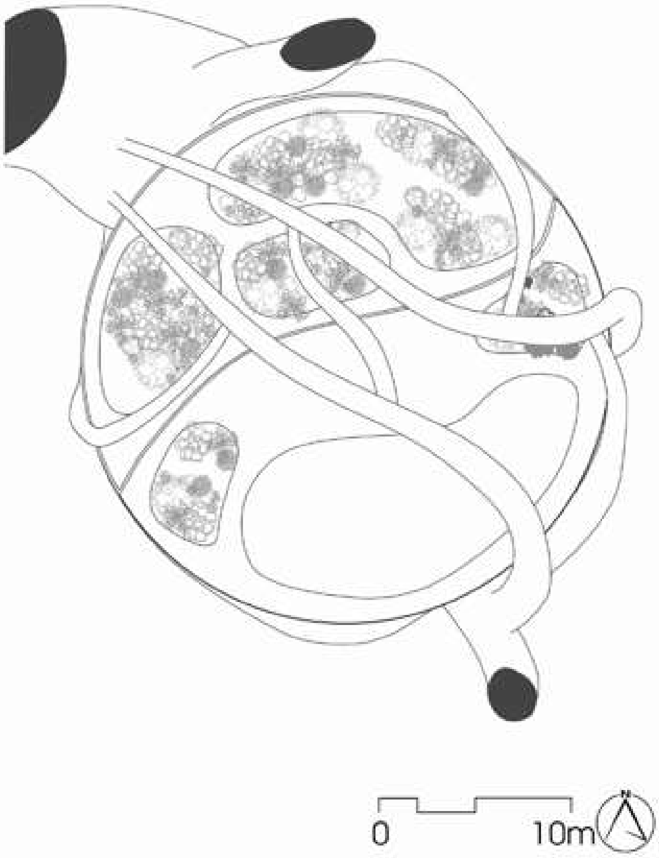
First Floor - 1:400



Standard Floor - 1:400



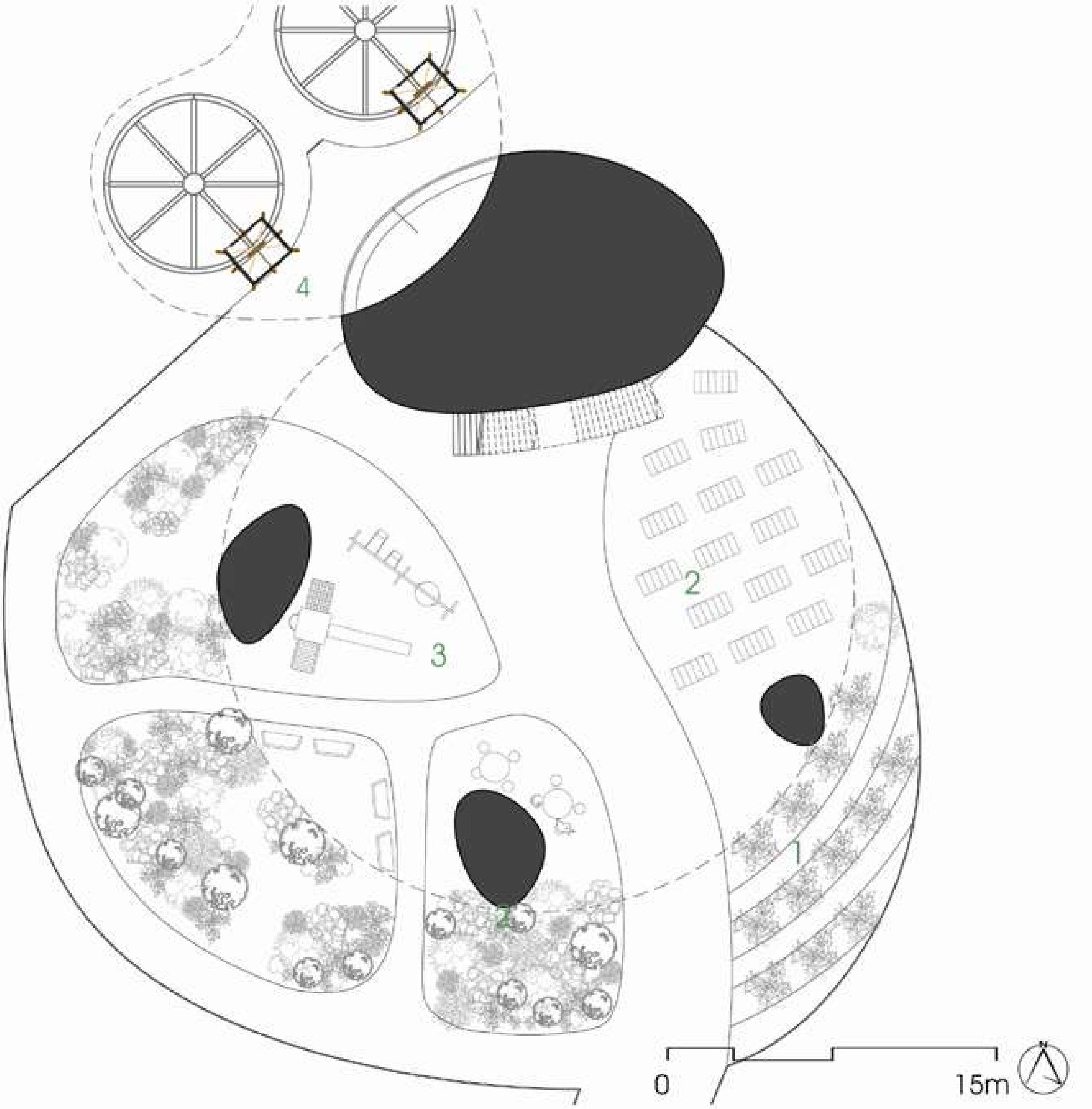
Top Floor - 1:400



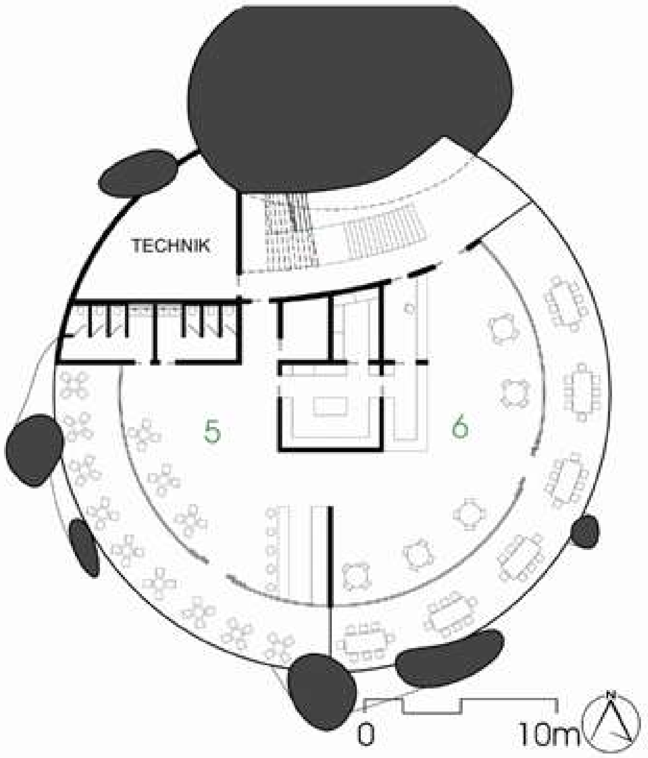
Top View - 1:400

Bulidng 4

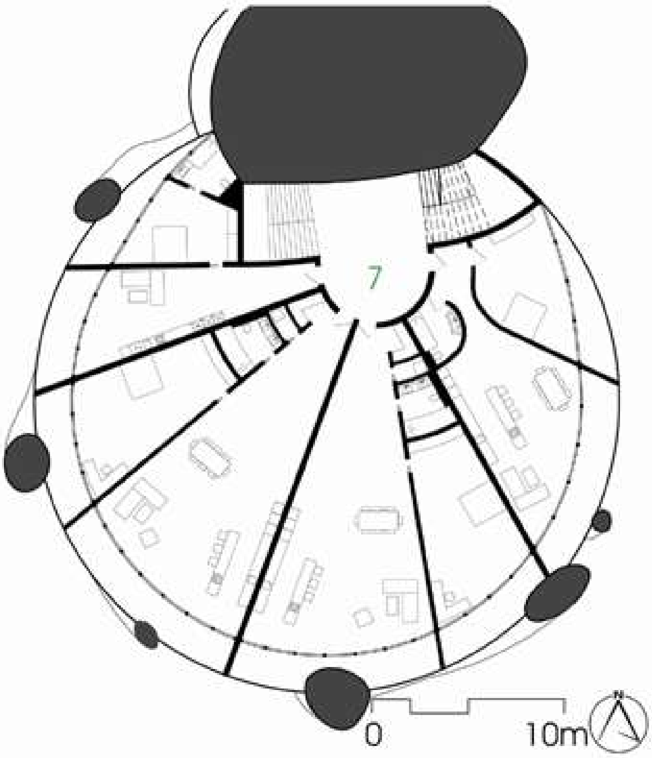
1 - Urban Farming
2 - Bio Market
3 - Playground
4 - Cable Car Stations
5 - Cafe/Bar
6 - Restaurant
7 - Apartmants
8 - Common Room
9 - Roof Garden



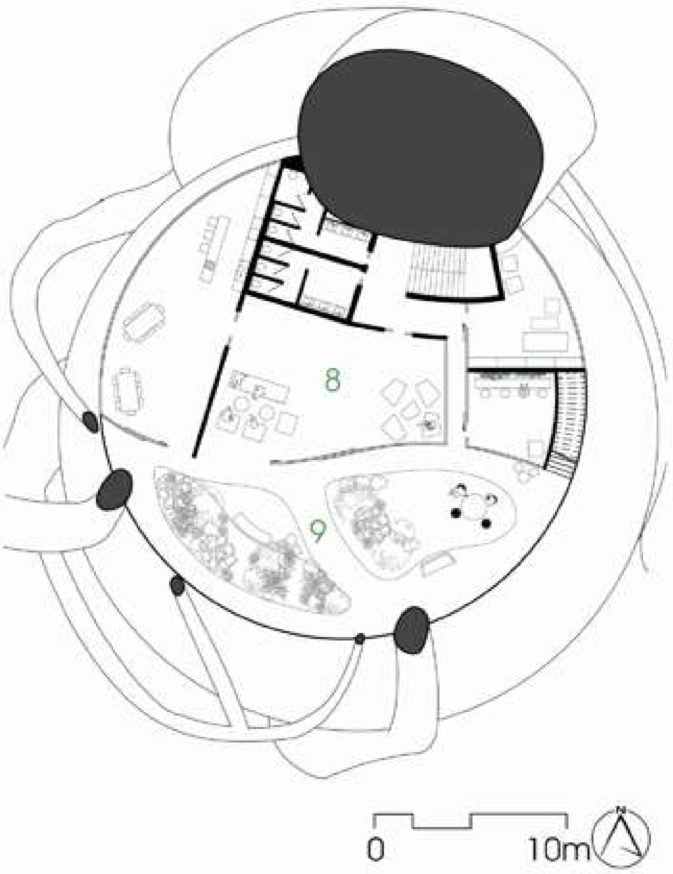
Ground Floor - 1:300



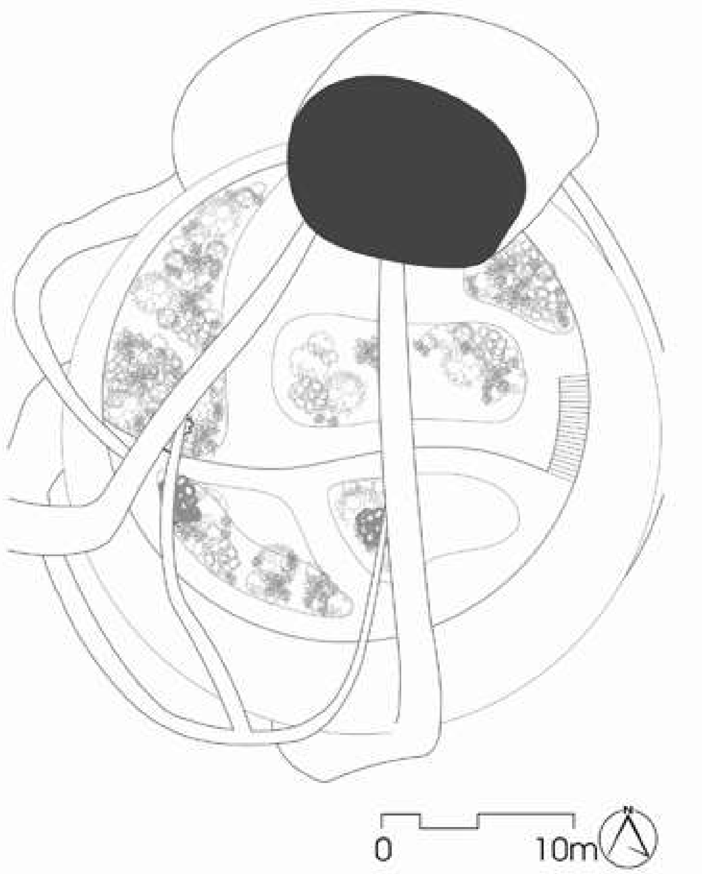
First Floor - 1:400



Standard Floor - 1:400



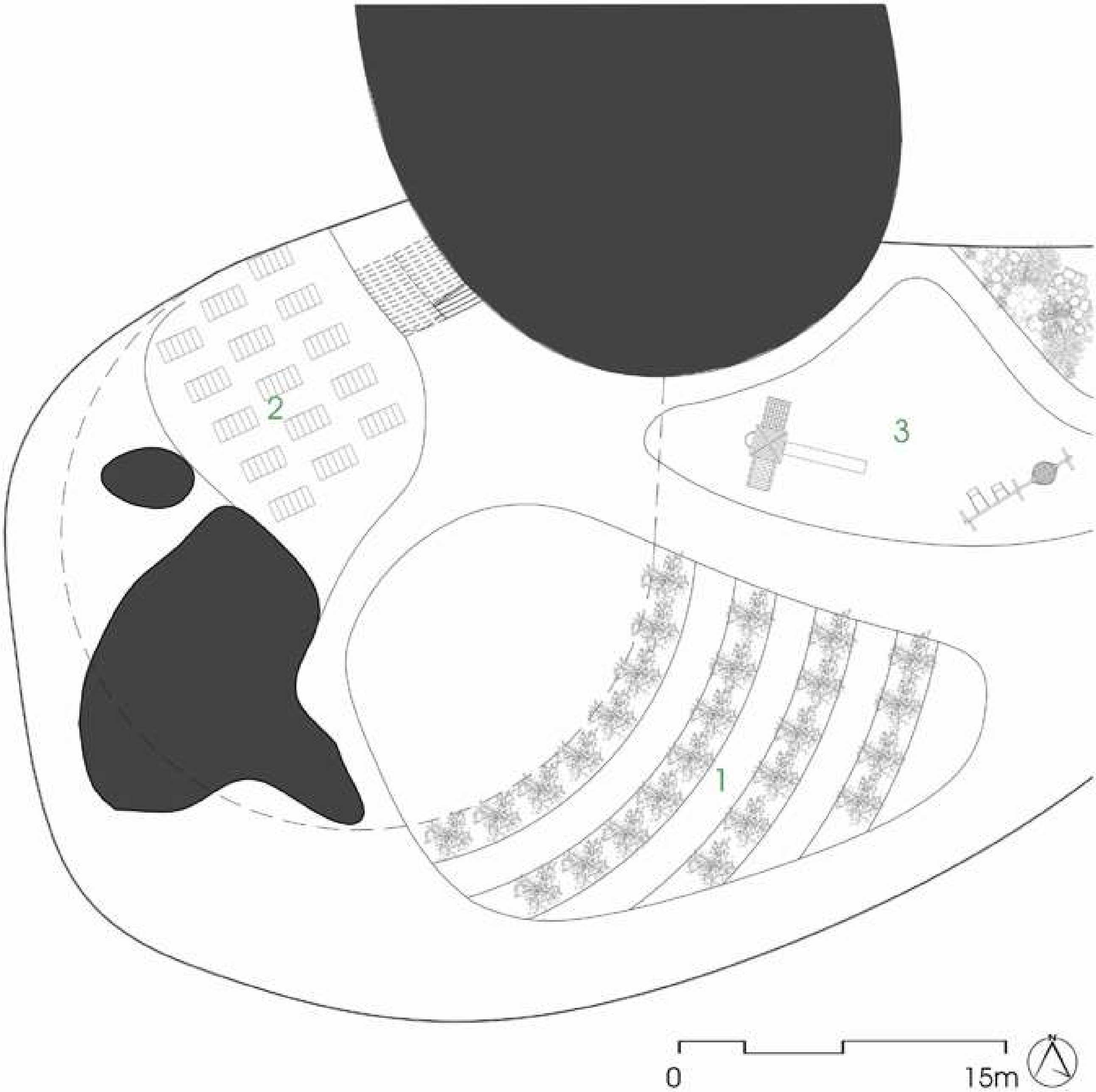
Top Floor - 1:400



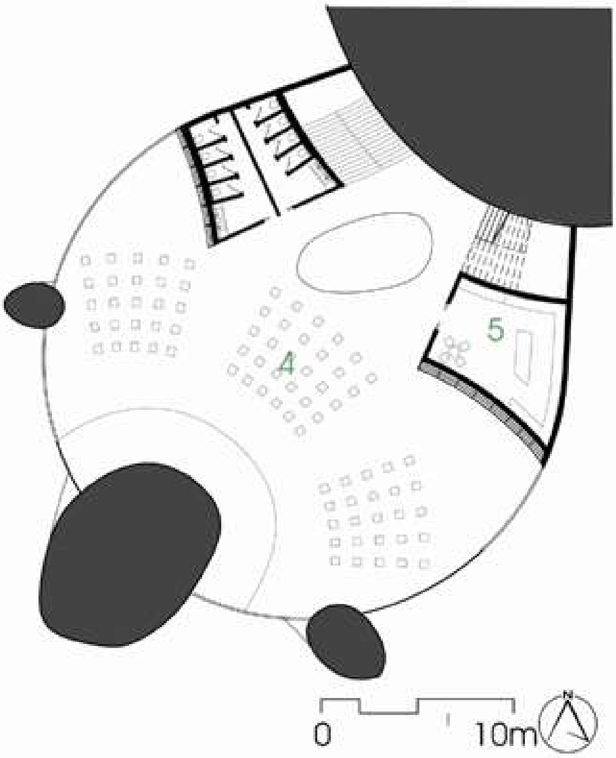
Top View - 1:400

Bulidng 5

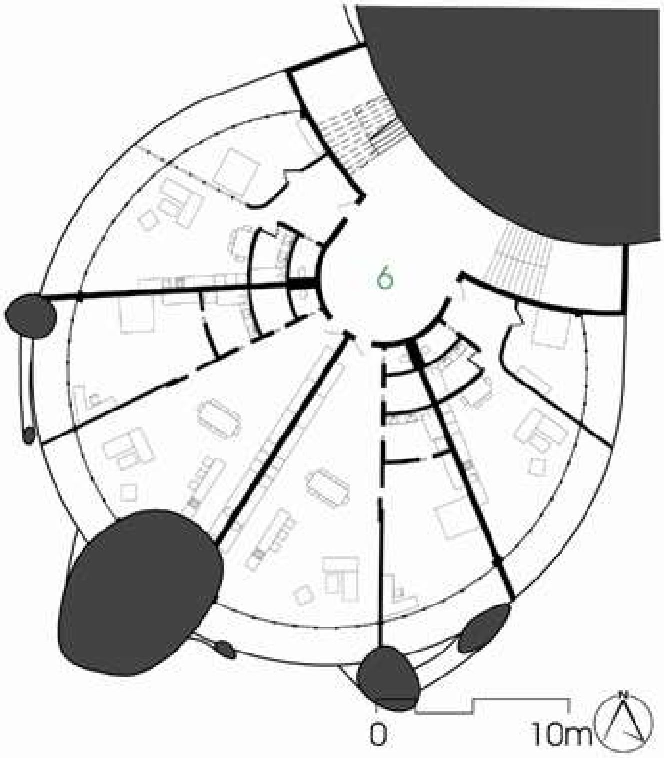
1 - Urban Farming
2 - Bio Market
3 - Playground
4 - Multifunctional Room
5 - Kitchen
6 - Apartmants
7 - Common Room
8 - Roof Garden



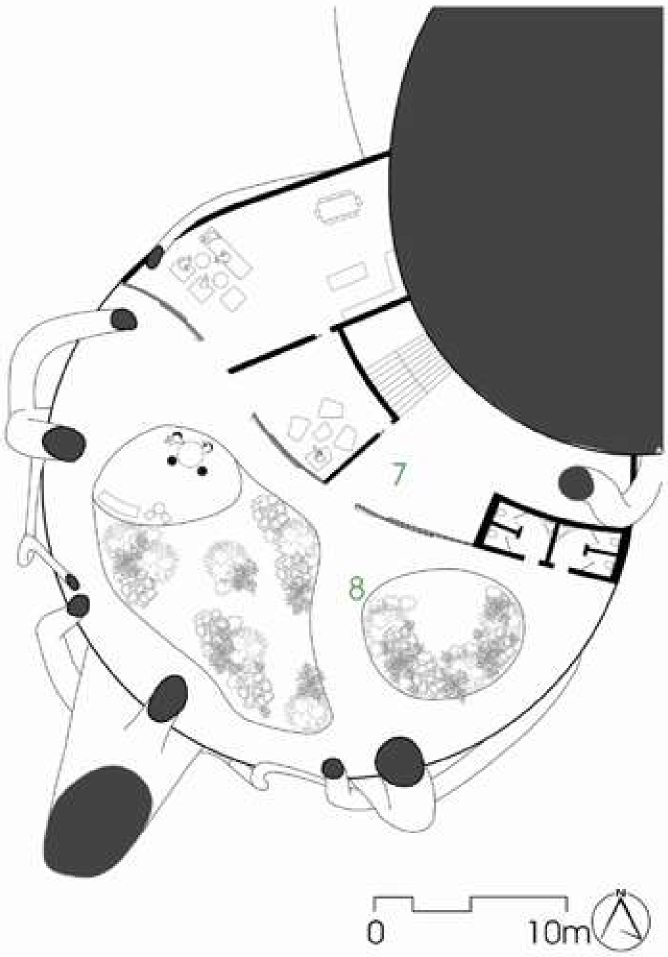
Ground Floor - 1:300



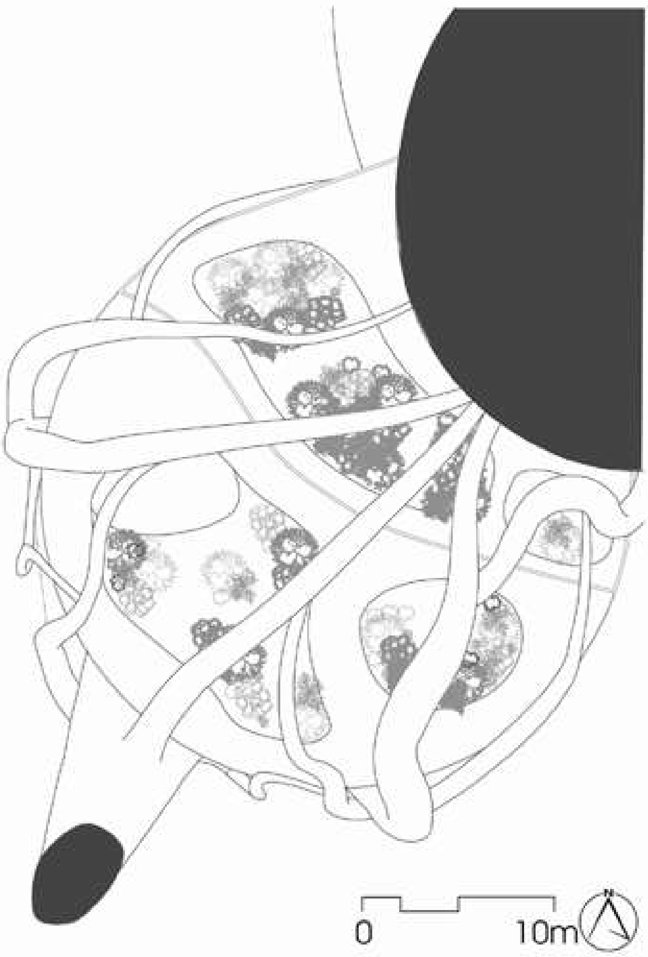
First Floor - 1:400



Standard Floor - 1:400



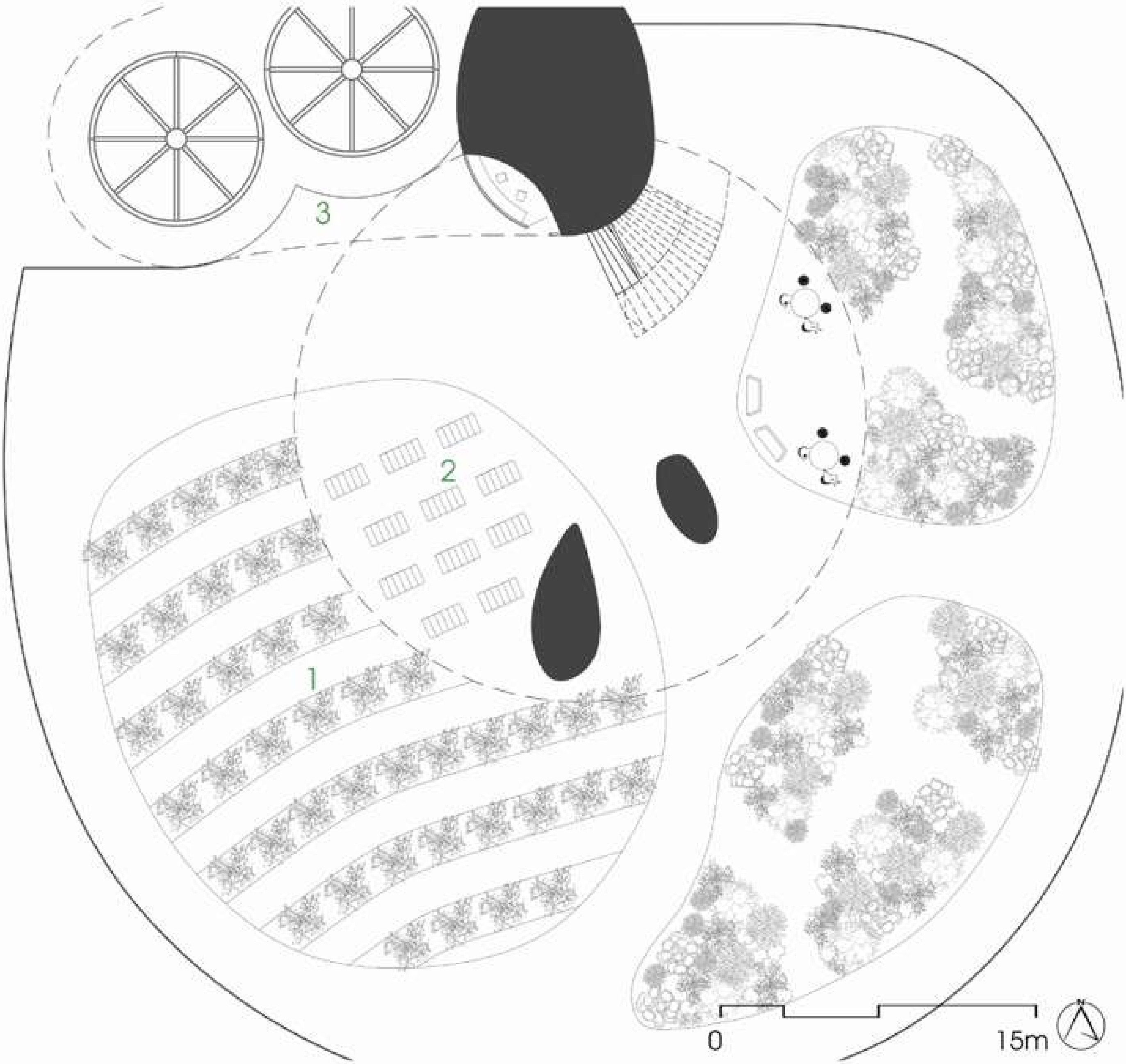
Top Floor - 1:400



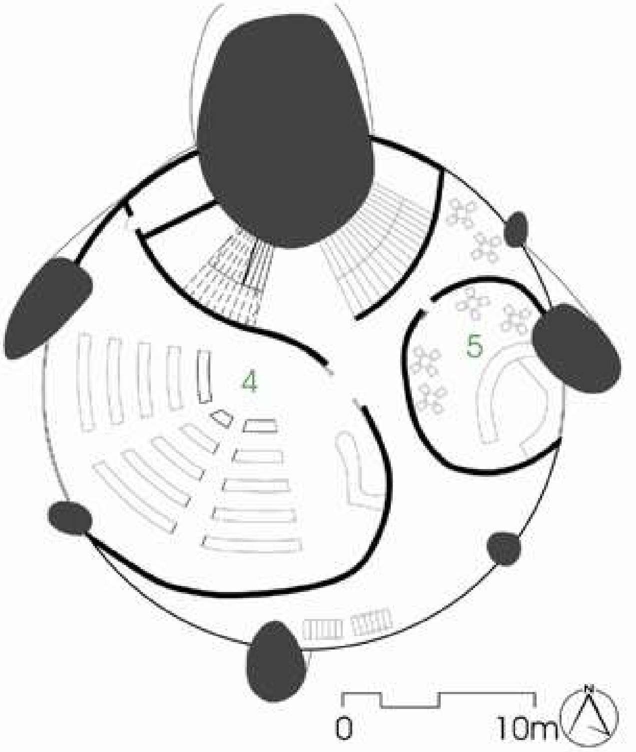
Top View - 1:400

Bulidng 6

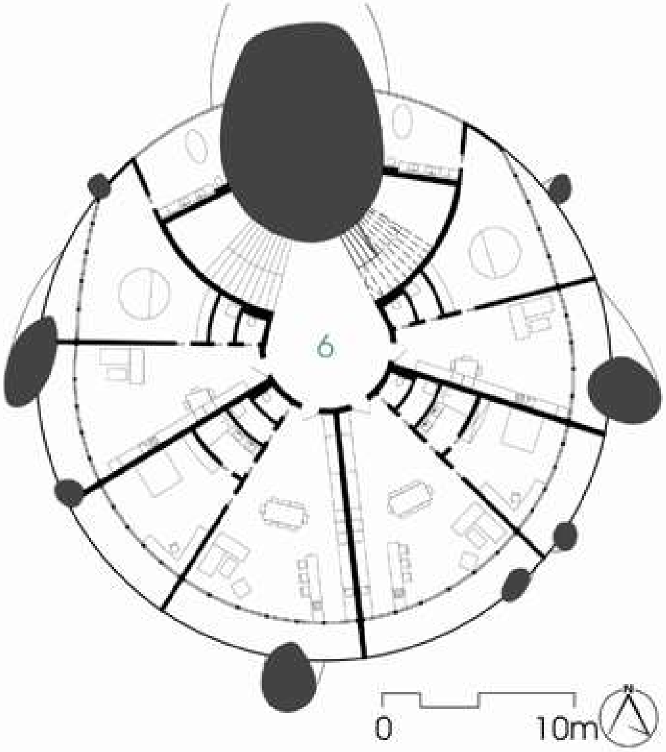
1 - Urban Farming
2 - Bio Market
3 - Cable Car Station
4 - Lecture Room
5 - Cafe
6 - Apartmants
7 - Restaurant



Ground Floor - 1:300

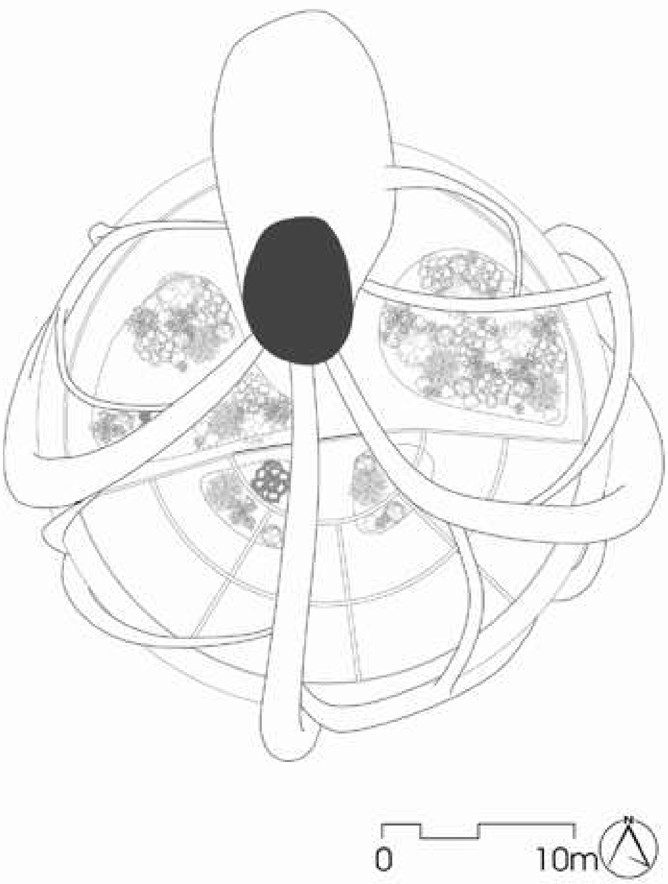


First Floor - 1:400



Standard Floor - 1:400

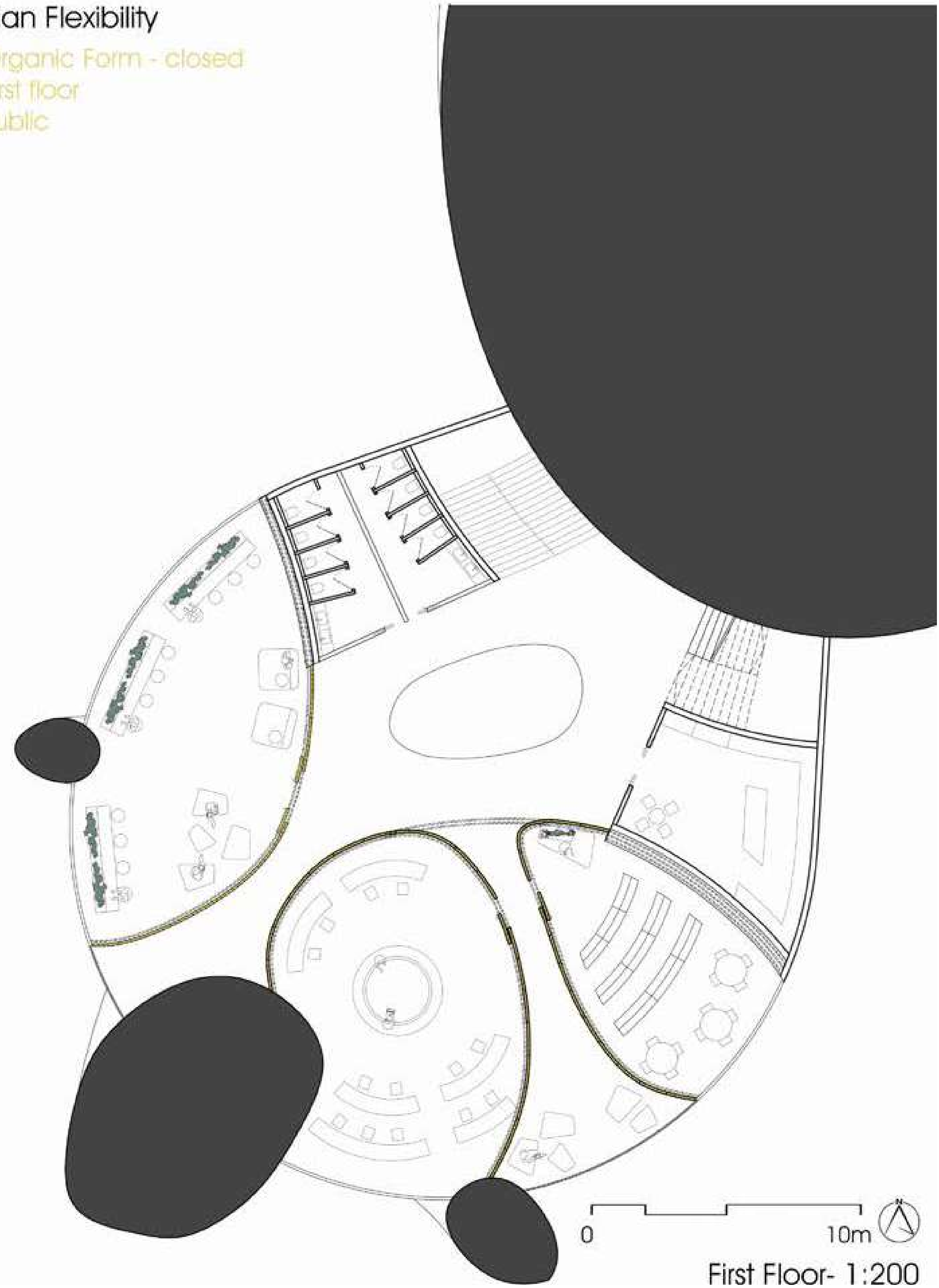
Top Floor - 1:400



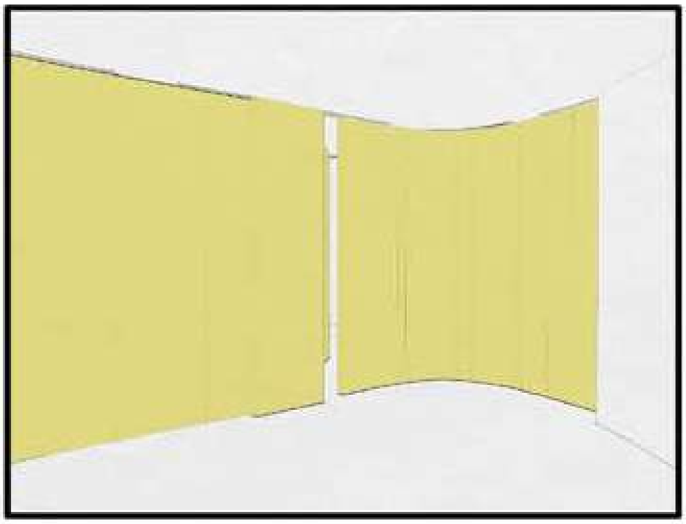
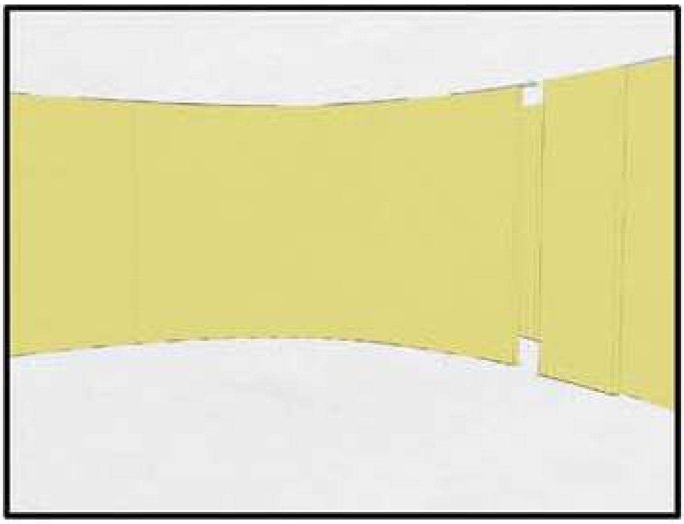
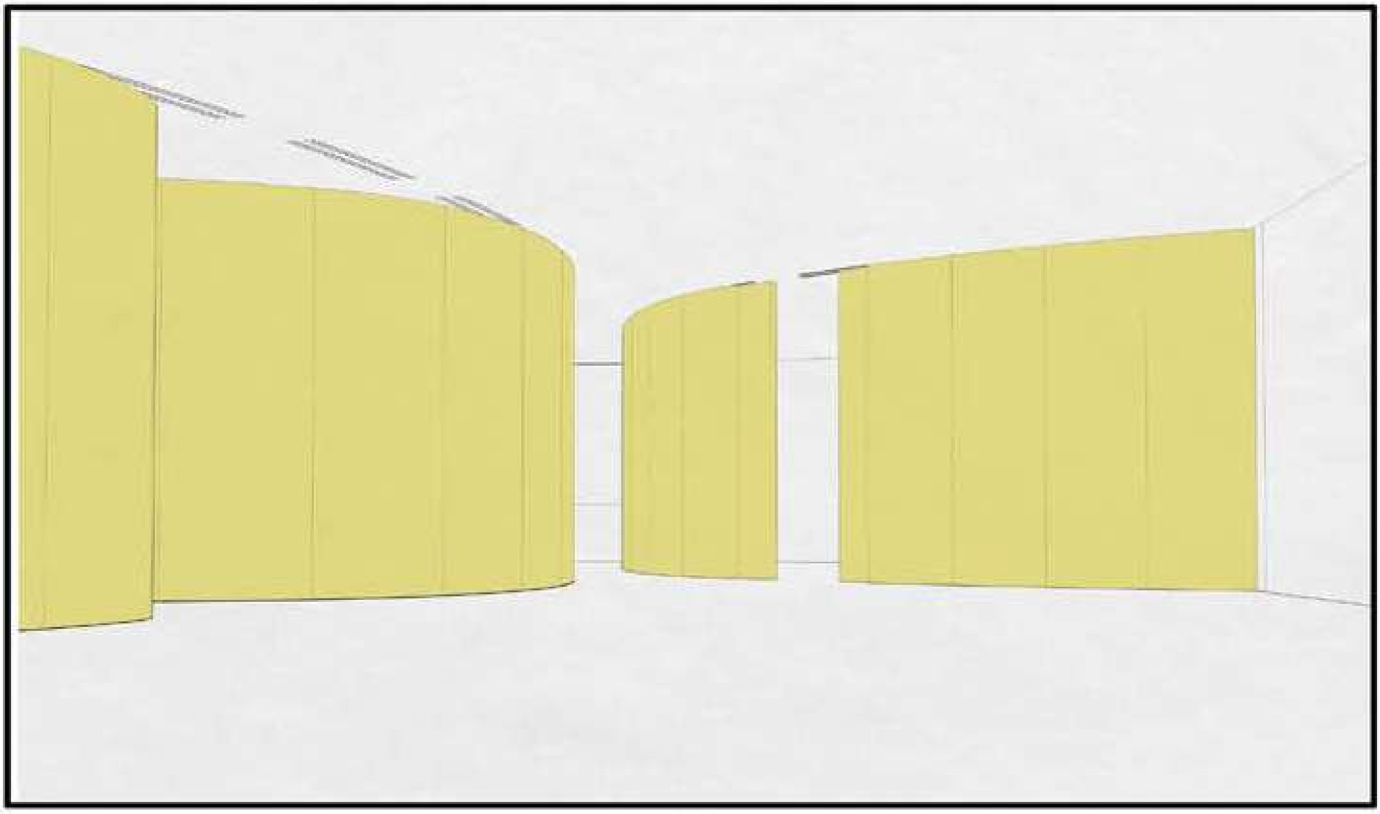
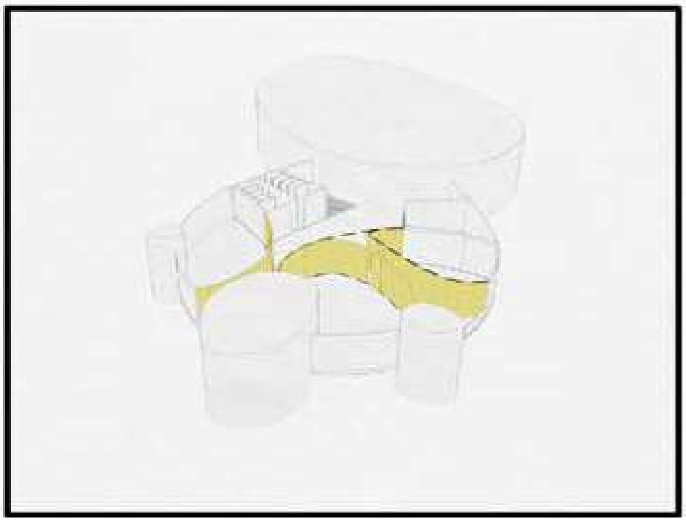
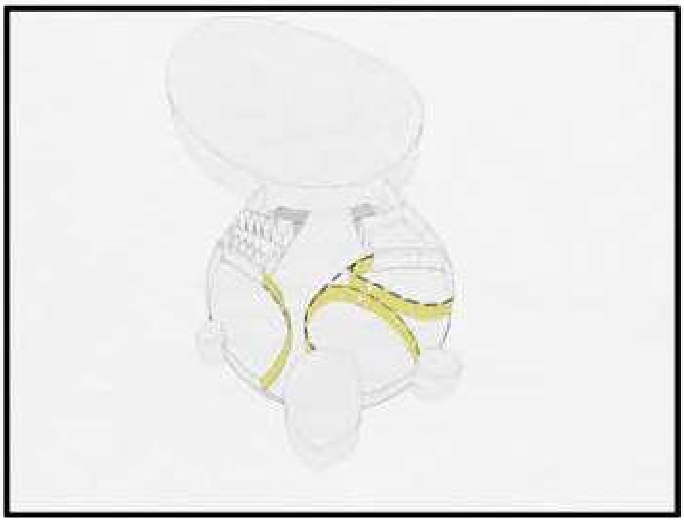
Top View - 1:400

Plan Flexibility

Organic Form - closed
First floor
Public

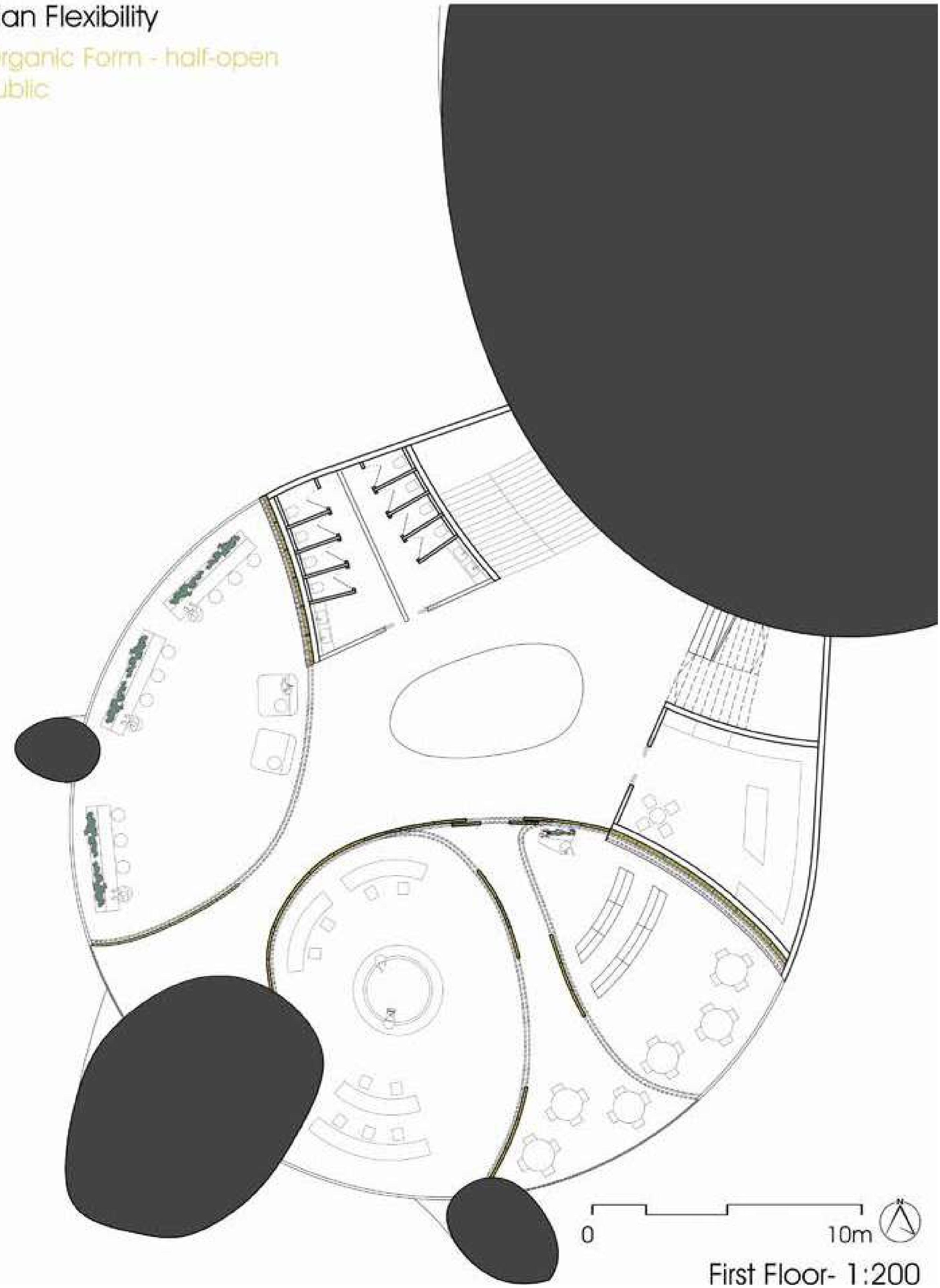


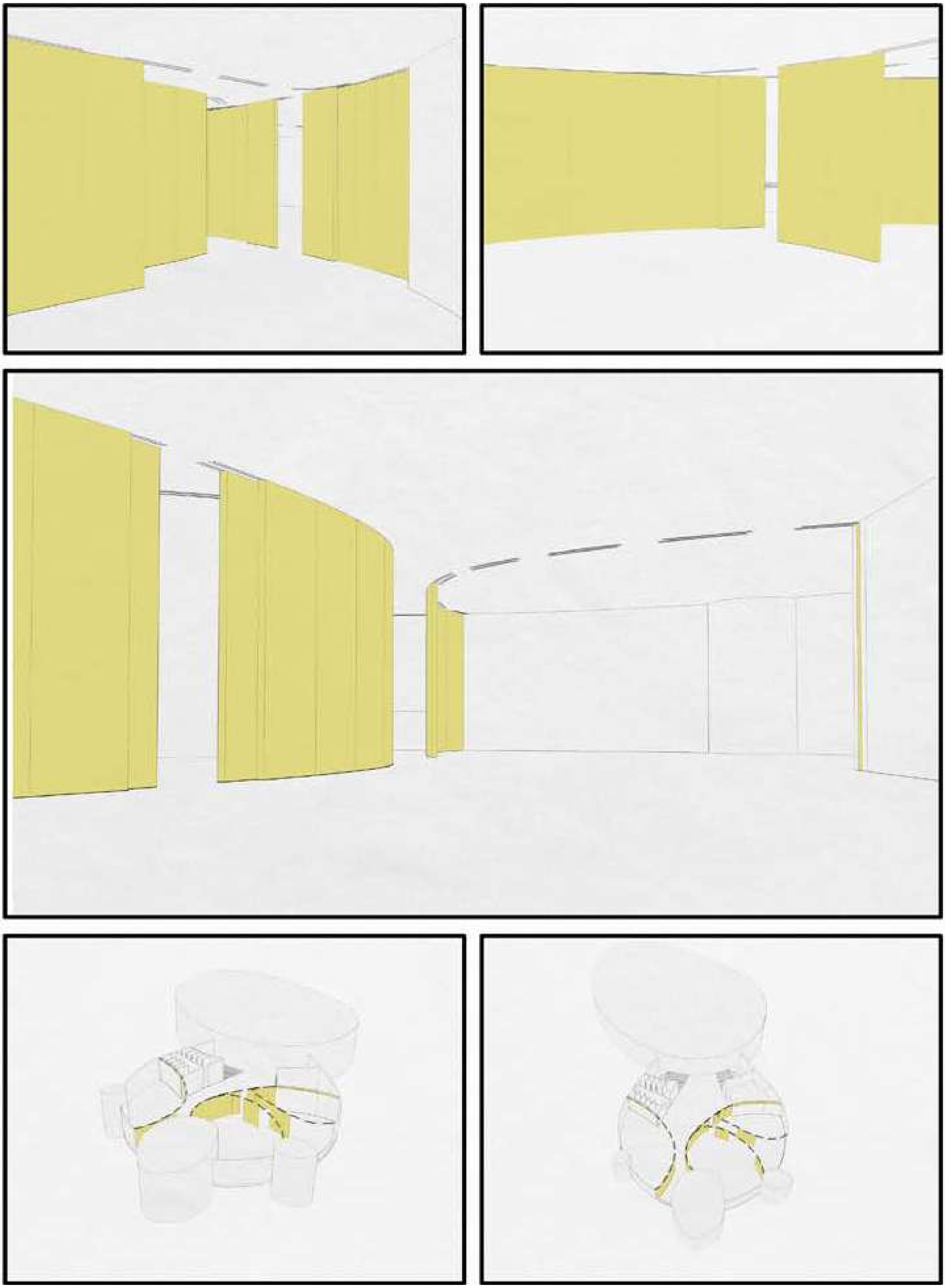
First Floor- 1:200

Plan Flexibility

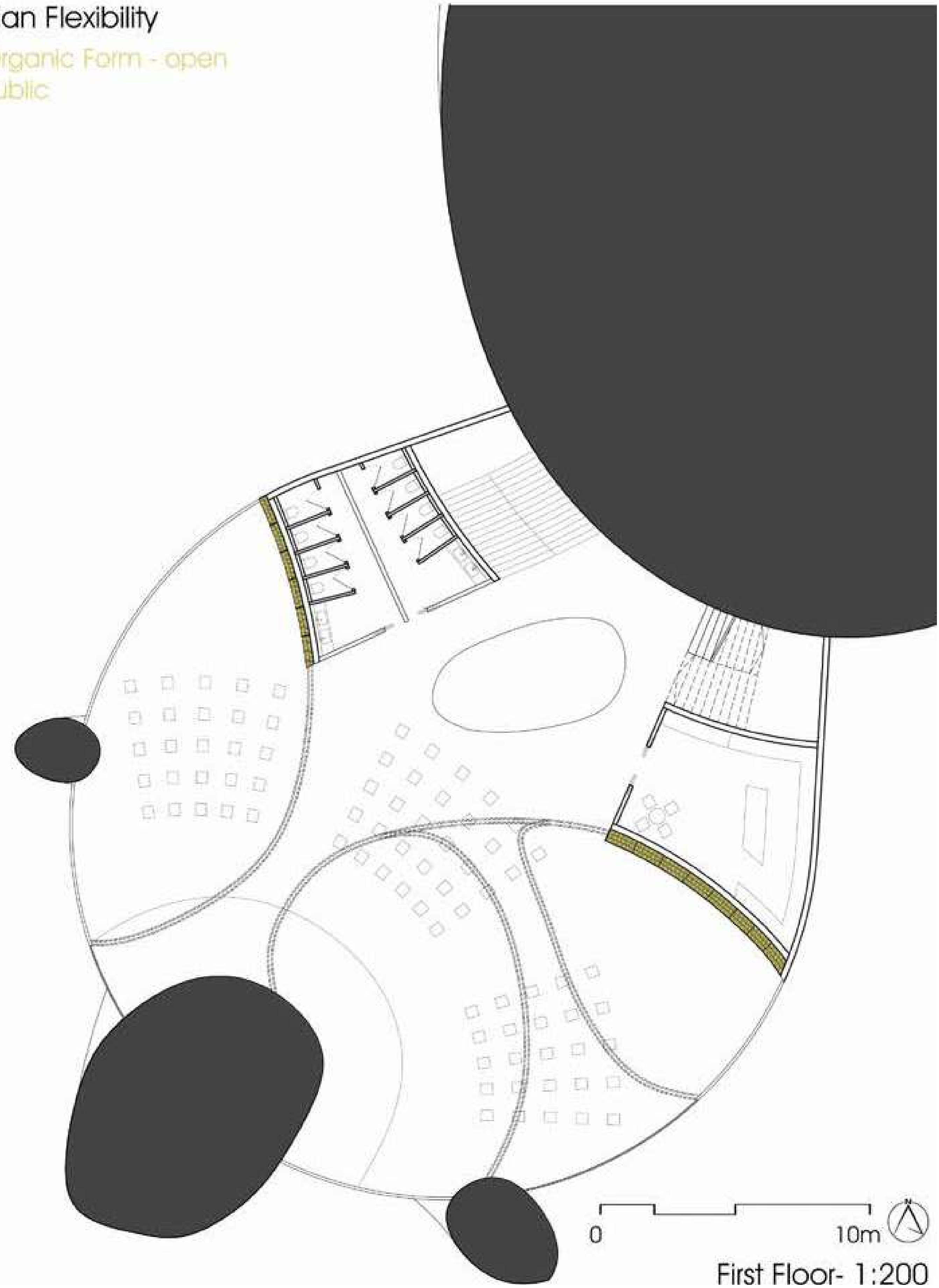
Organic Form - half-open
Public



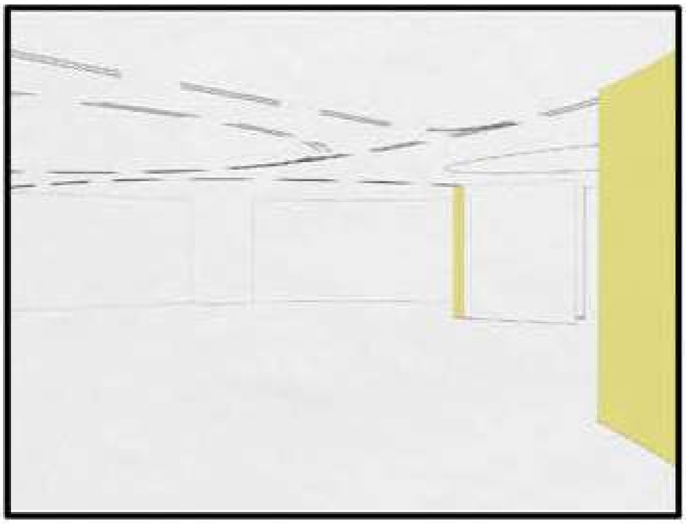
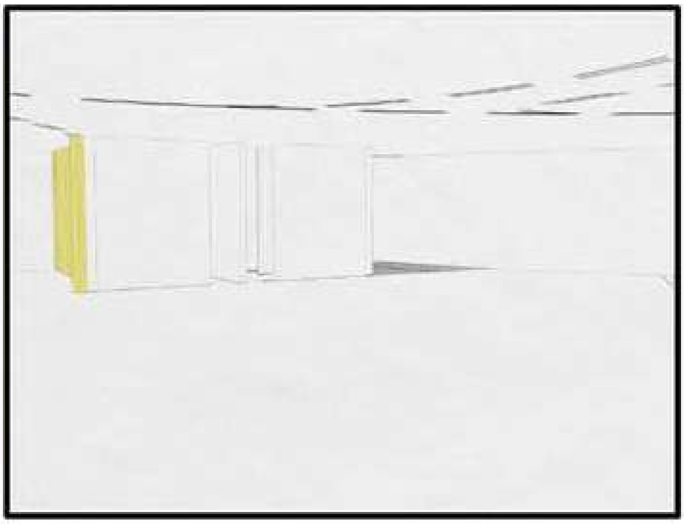
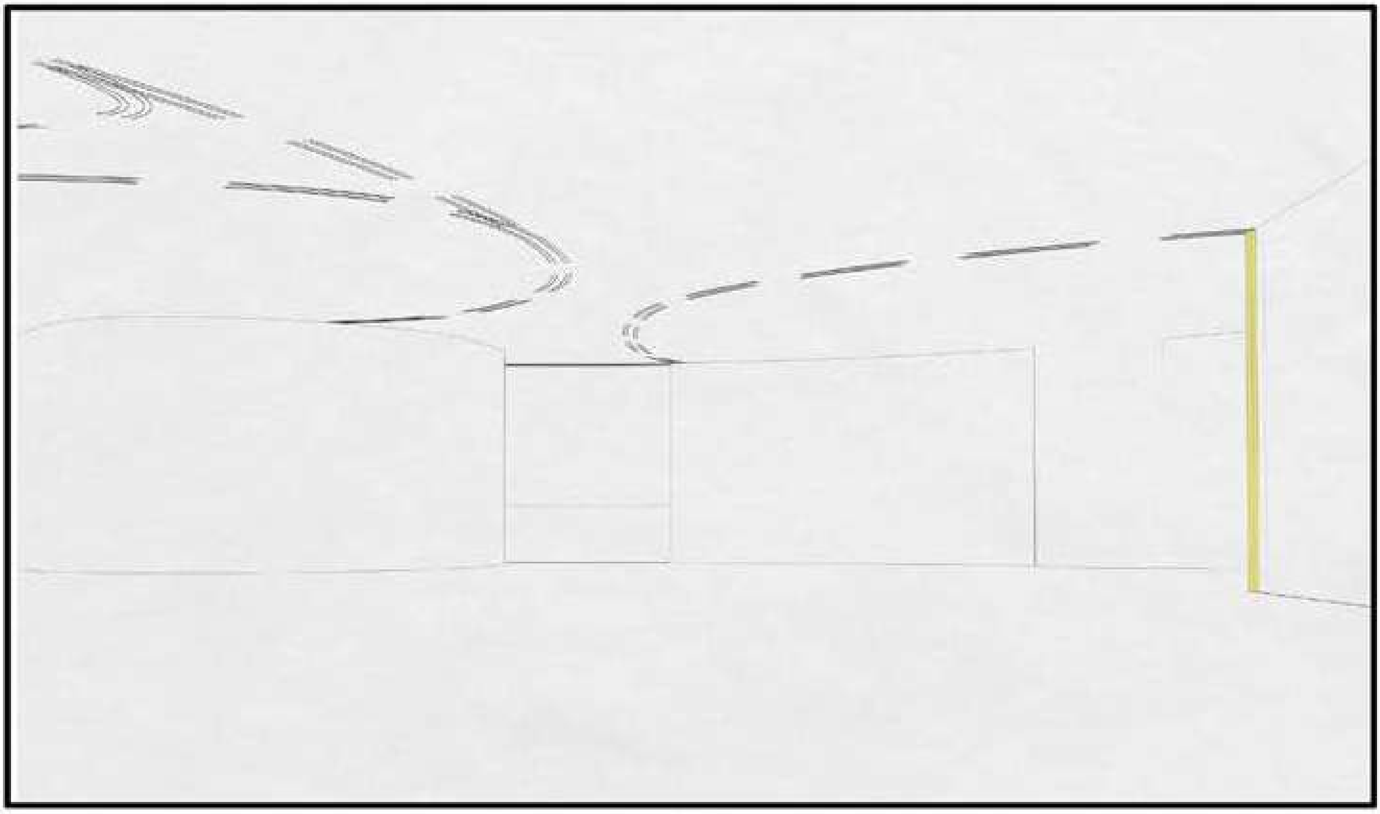
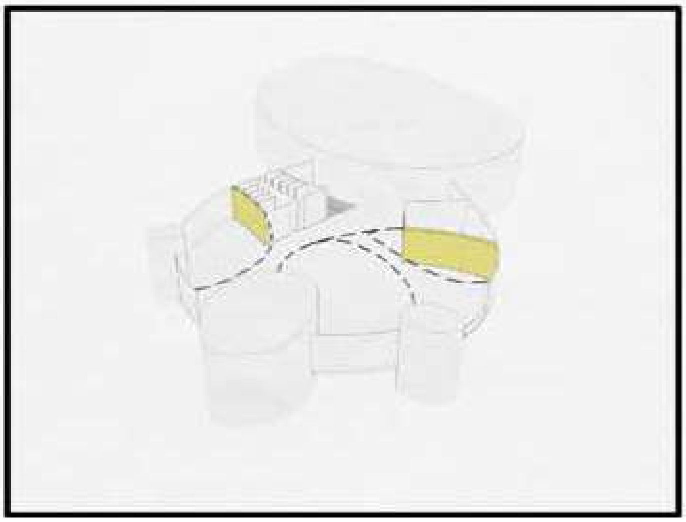
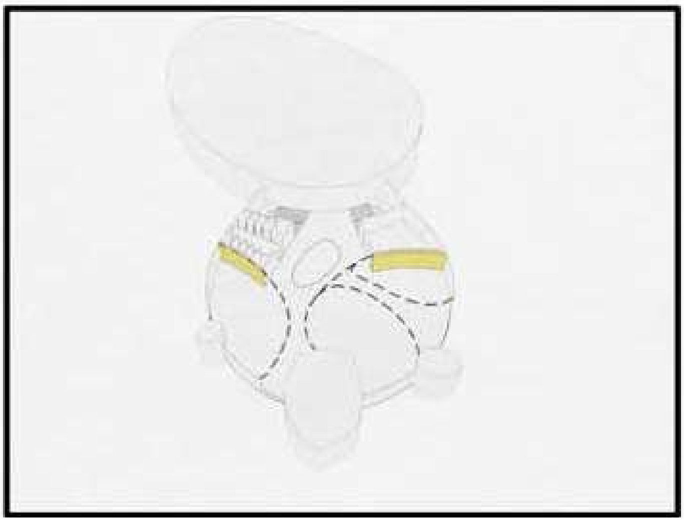


Plan Flexibility

Organic Form - open
Public

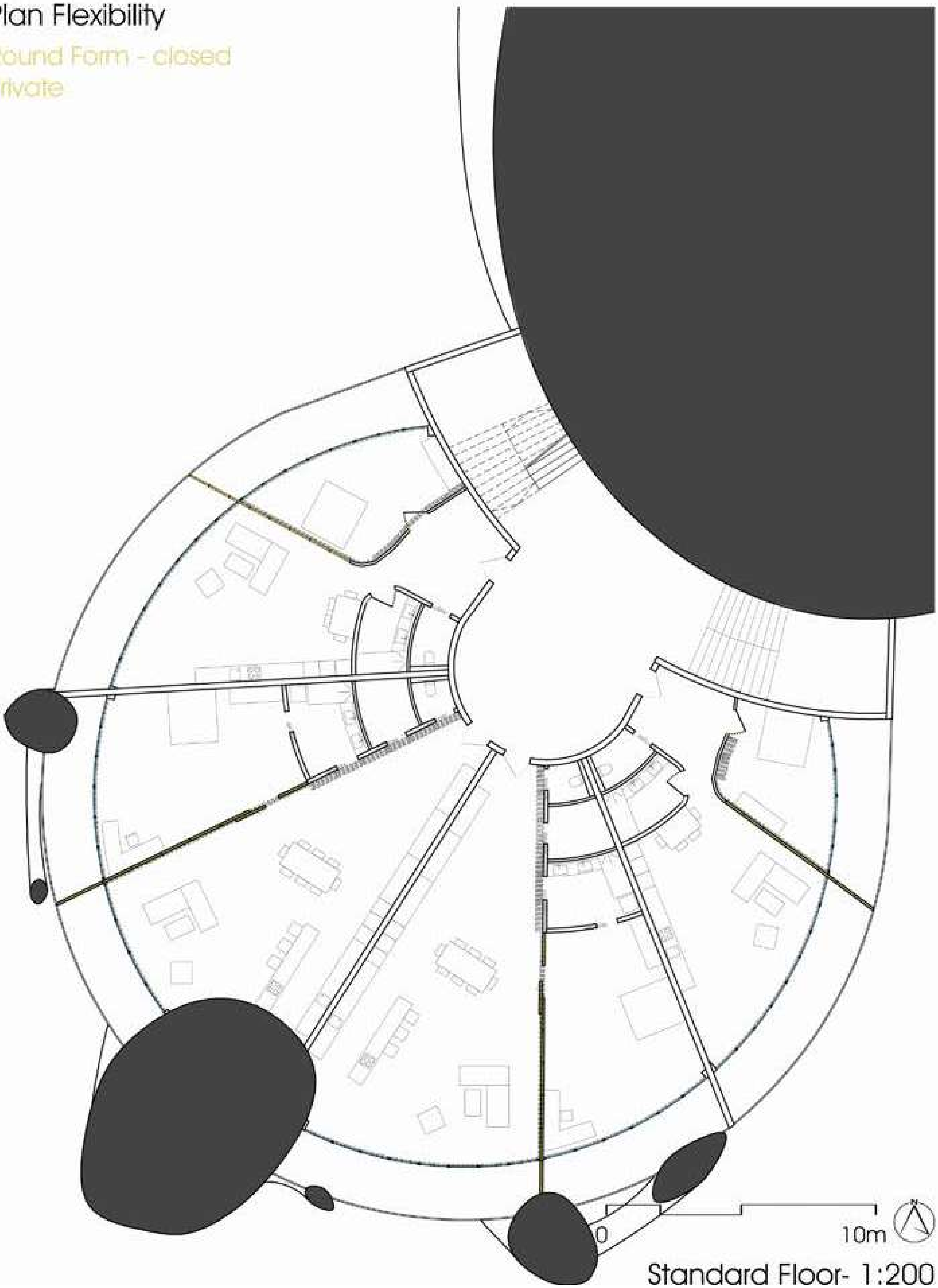


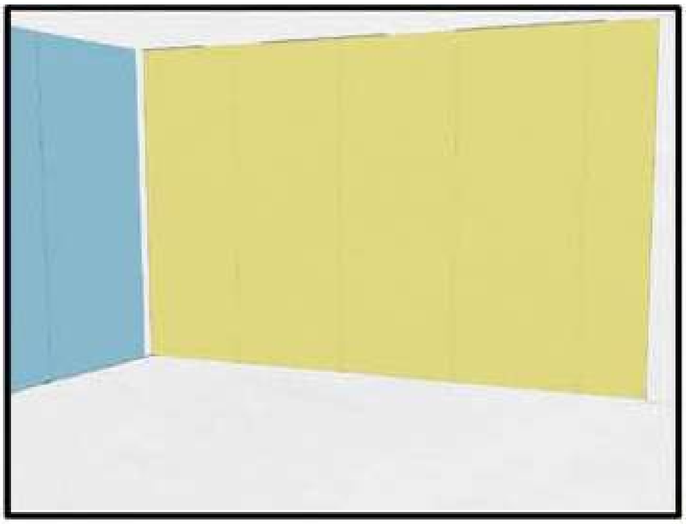
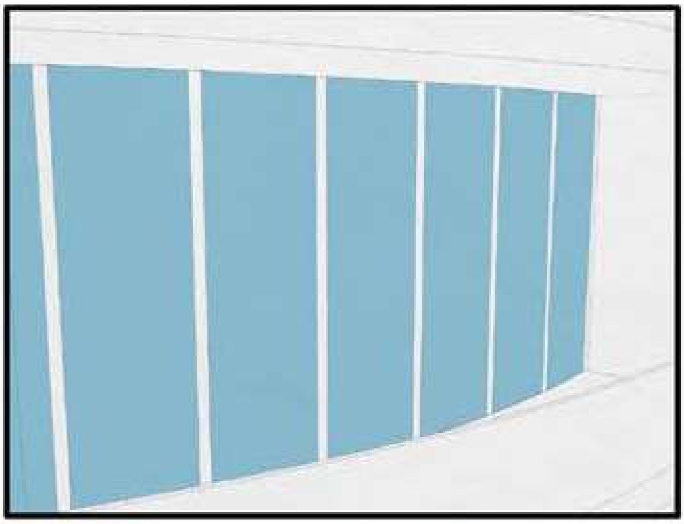
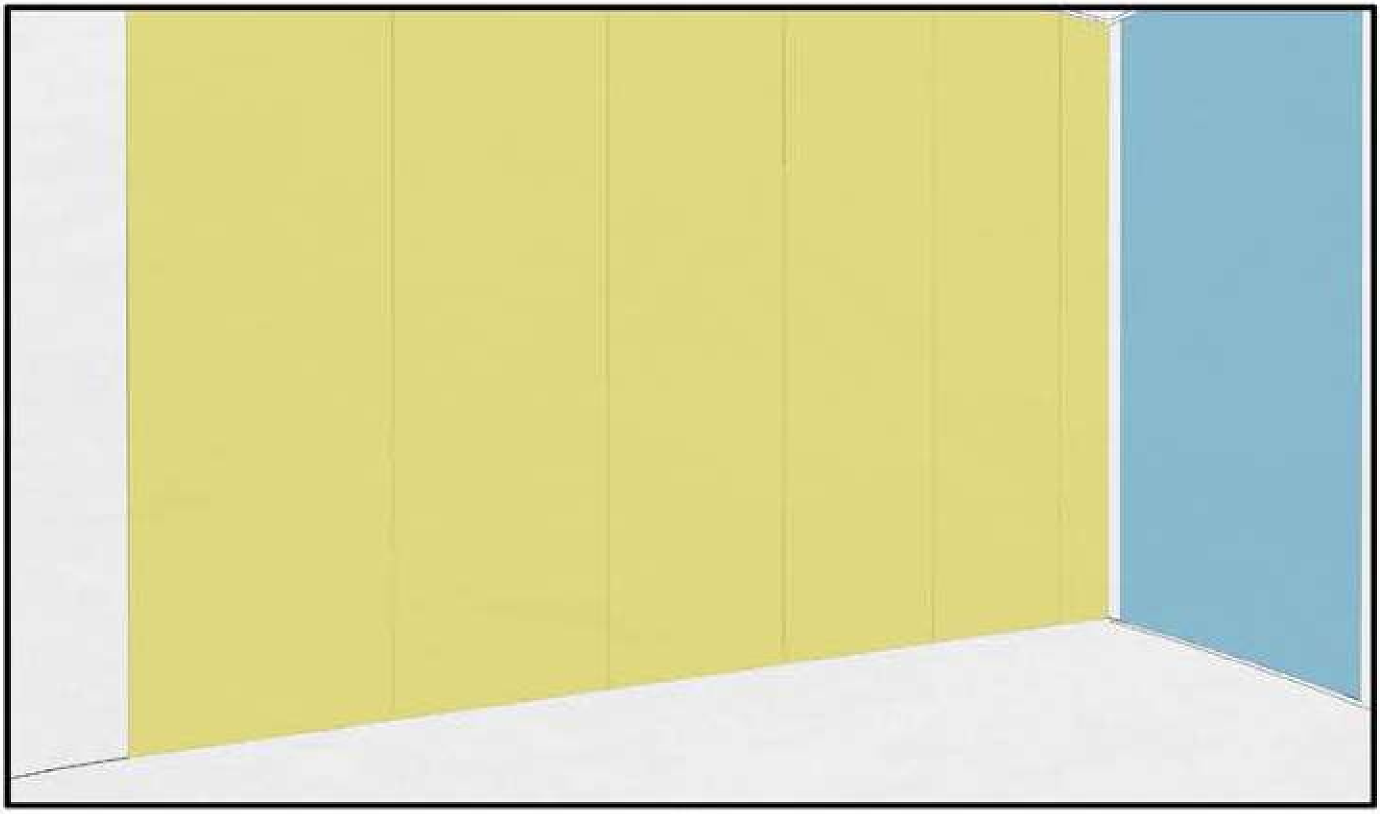
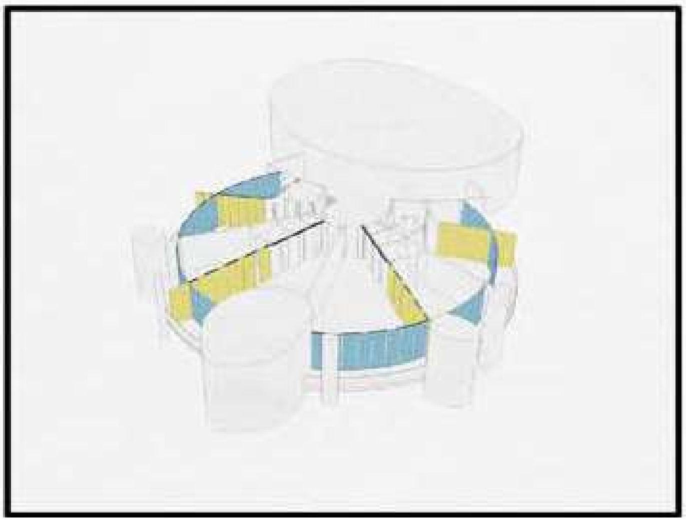
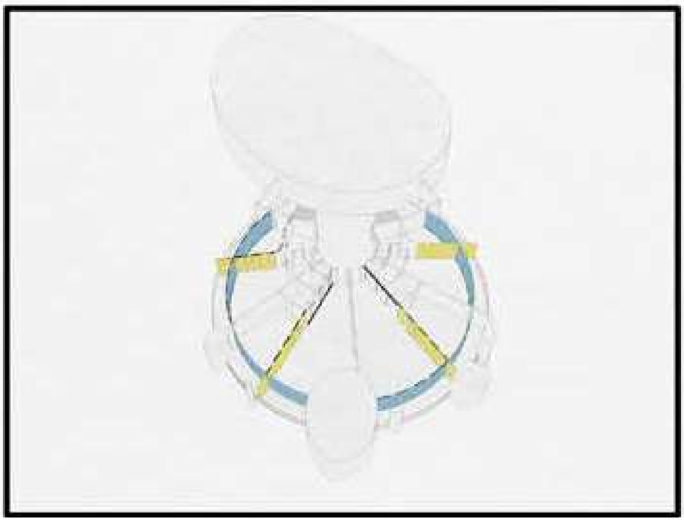
First Floor- 1:200

Plan Flexibility

Round Form - closed
Private

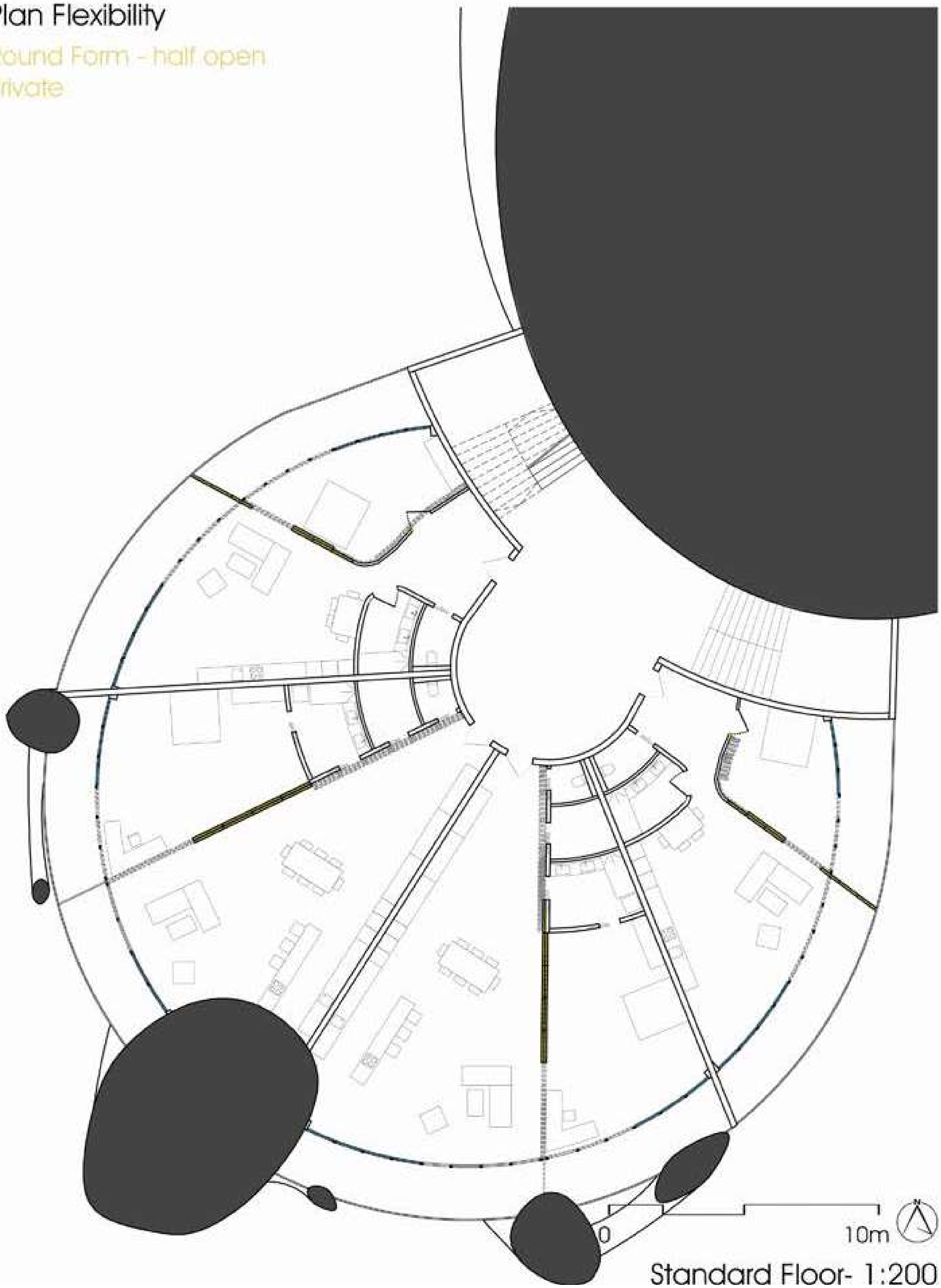


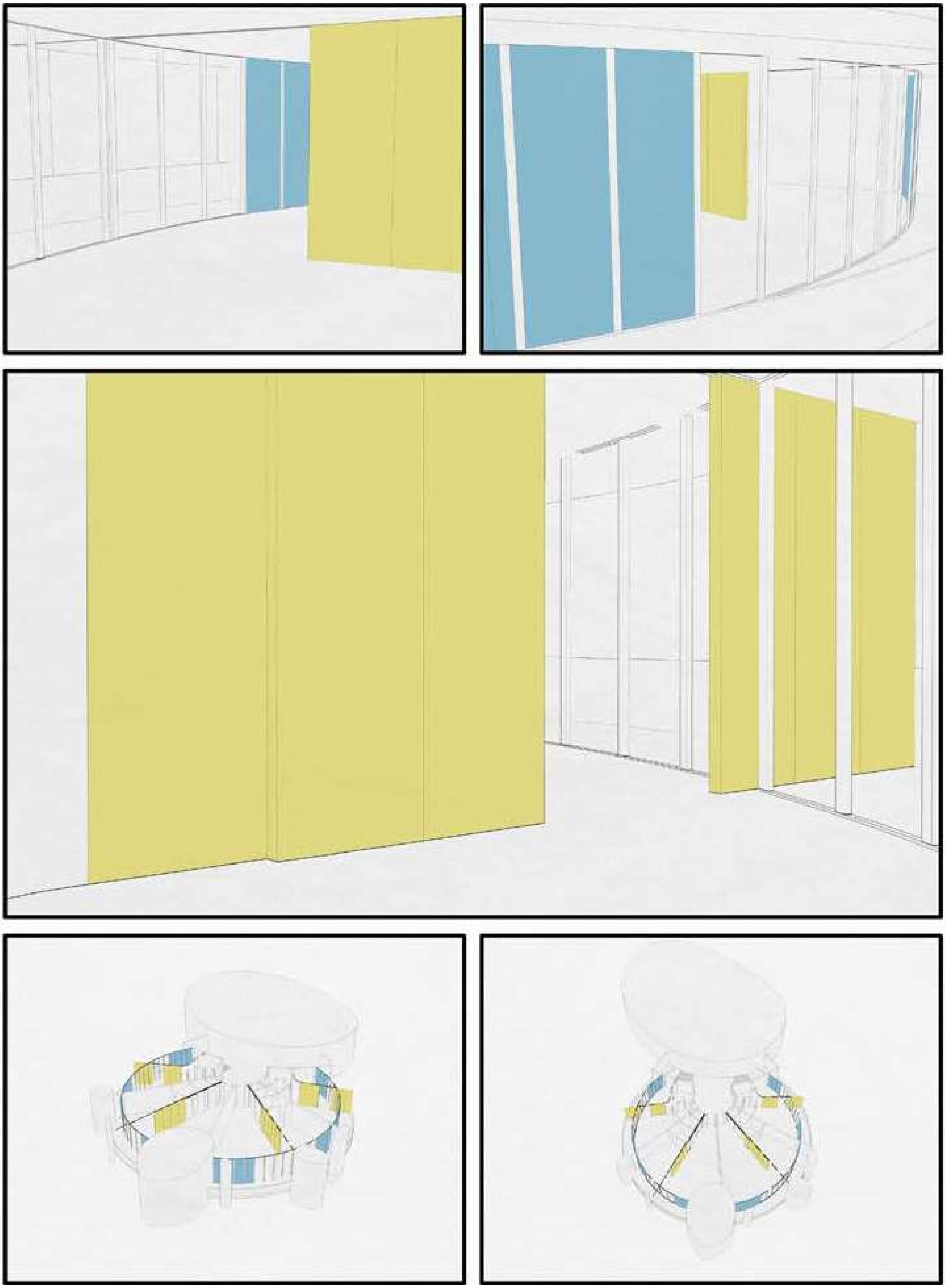
Plan Flexibility

Round Form - half open

Private

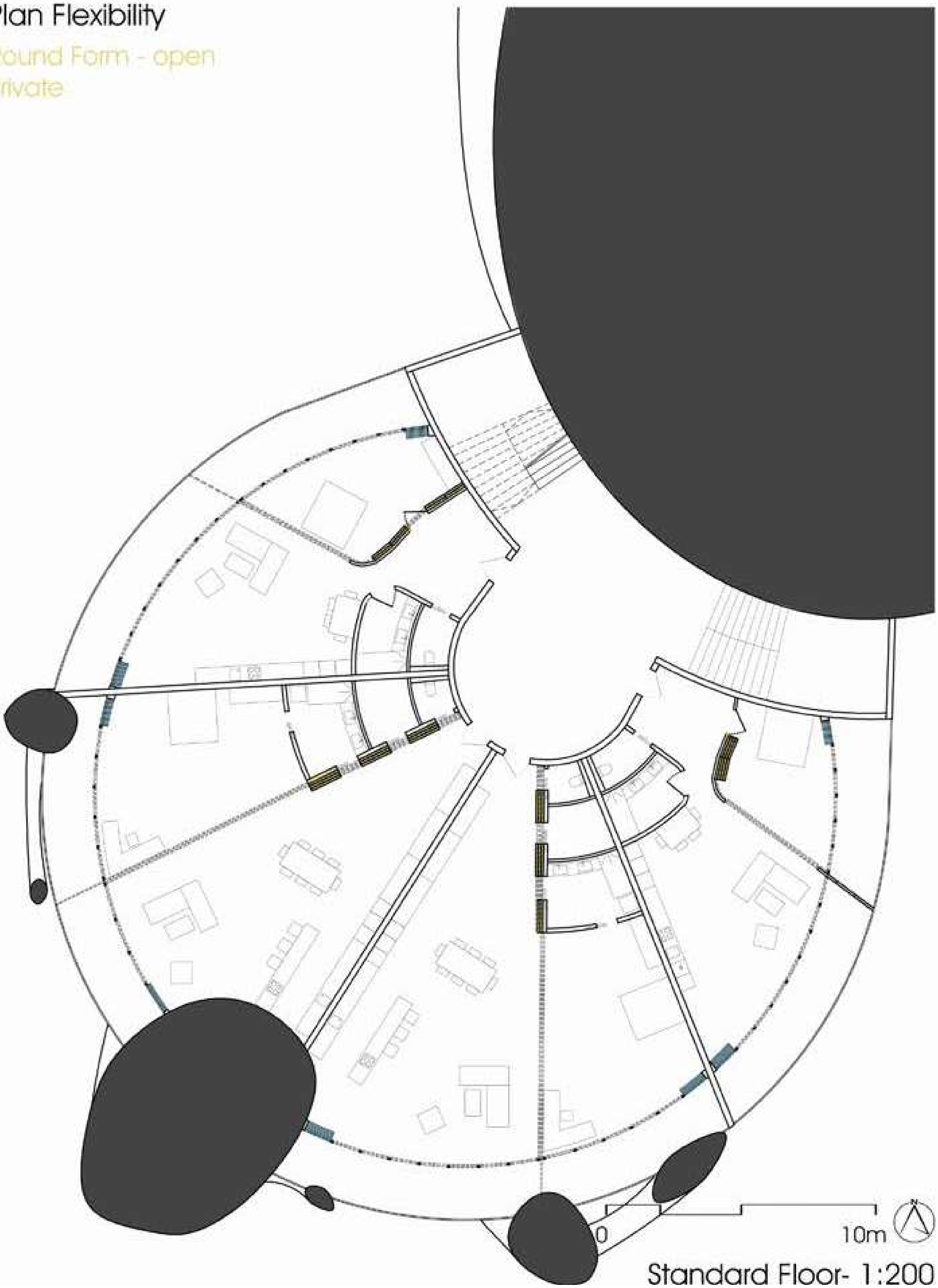


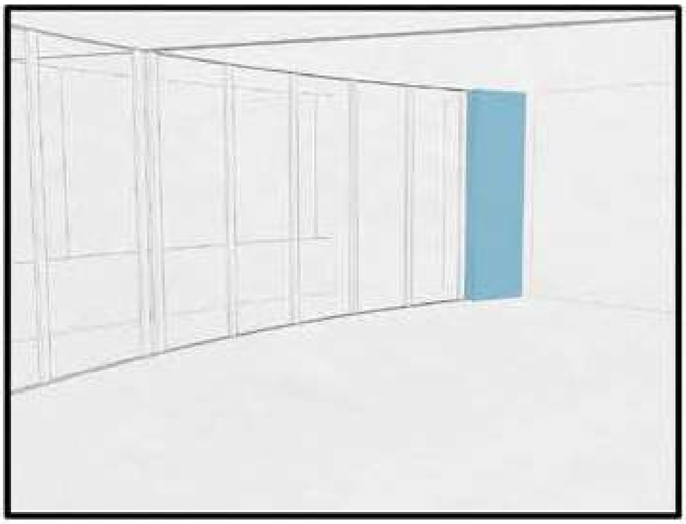
Standard Floor- 1:200

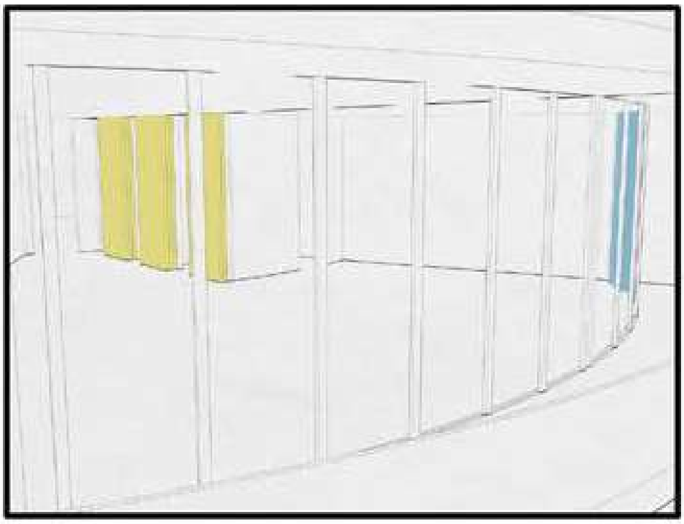


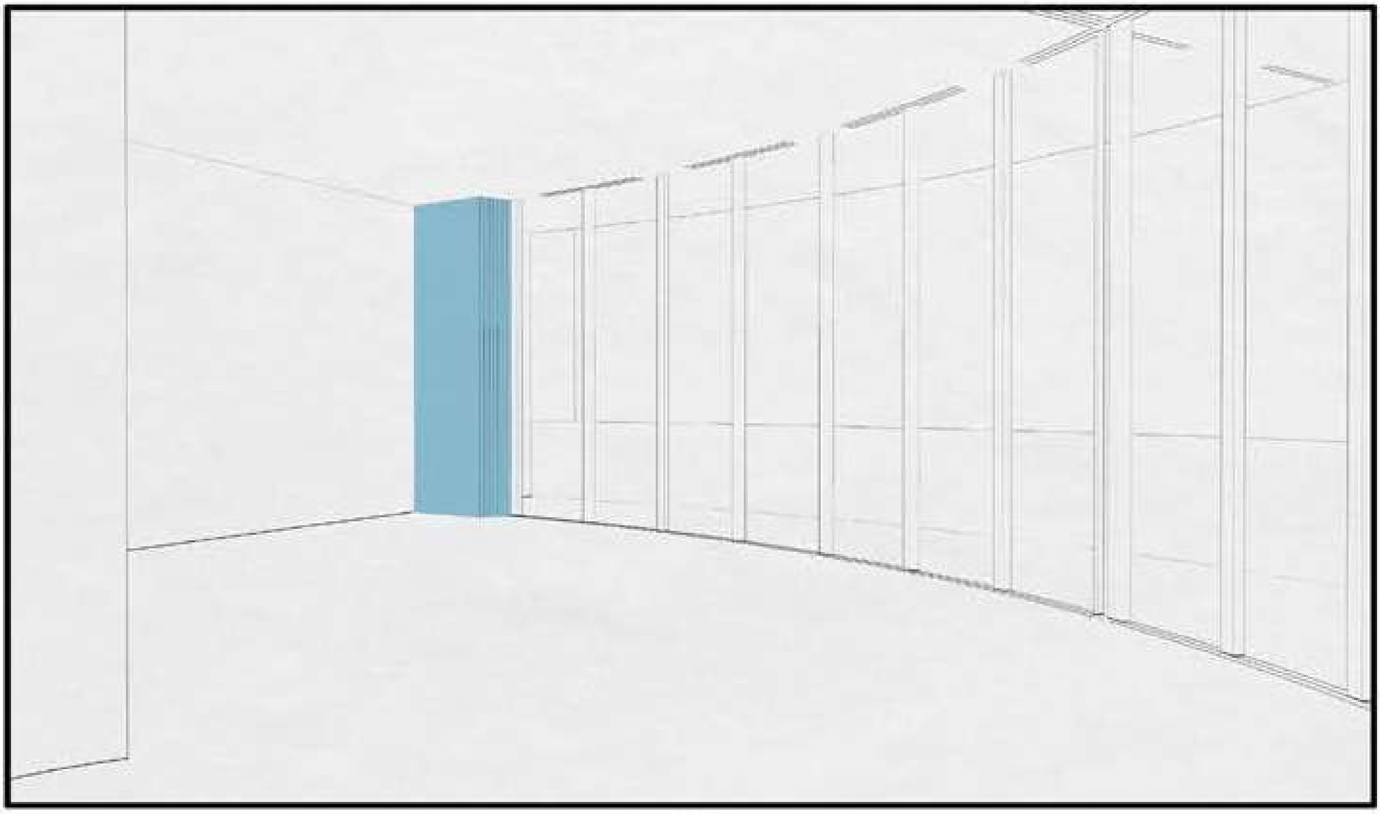
Plan Flexibility

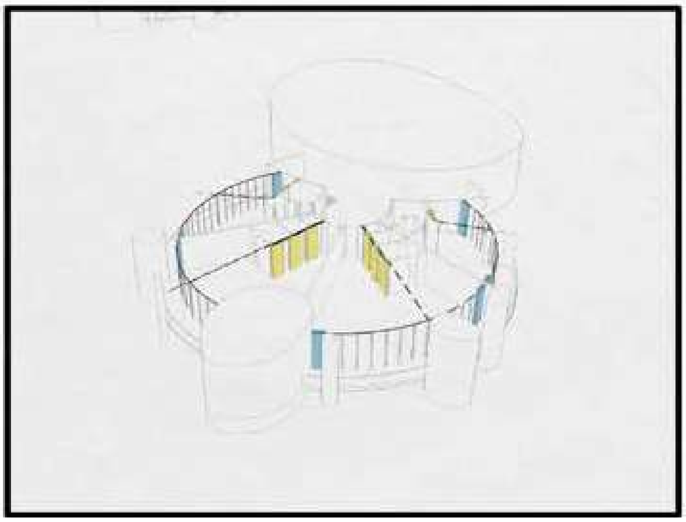
Round Form - open
Private

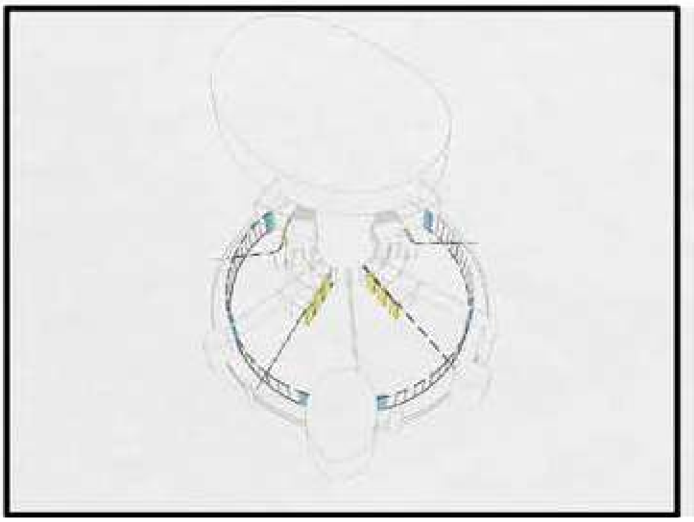










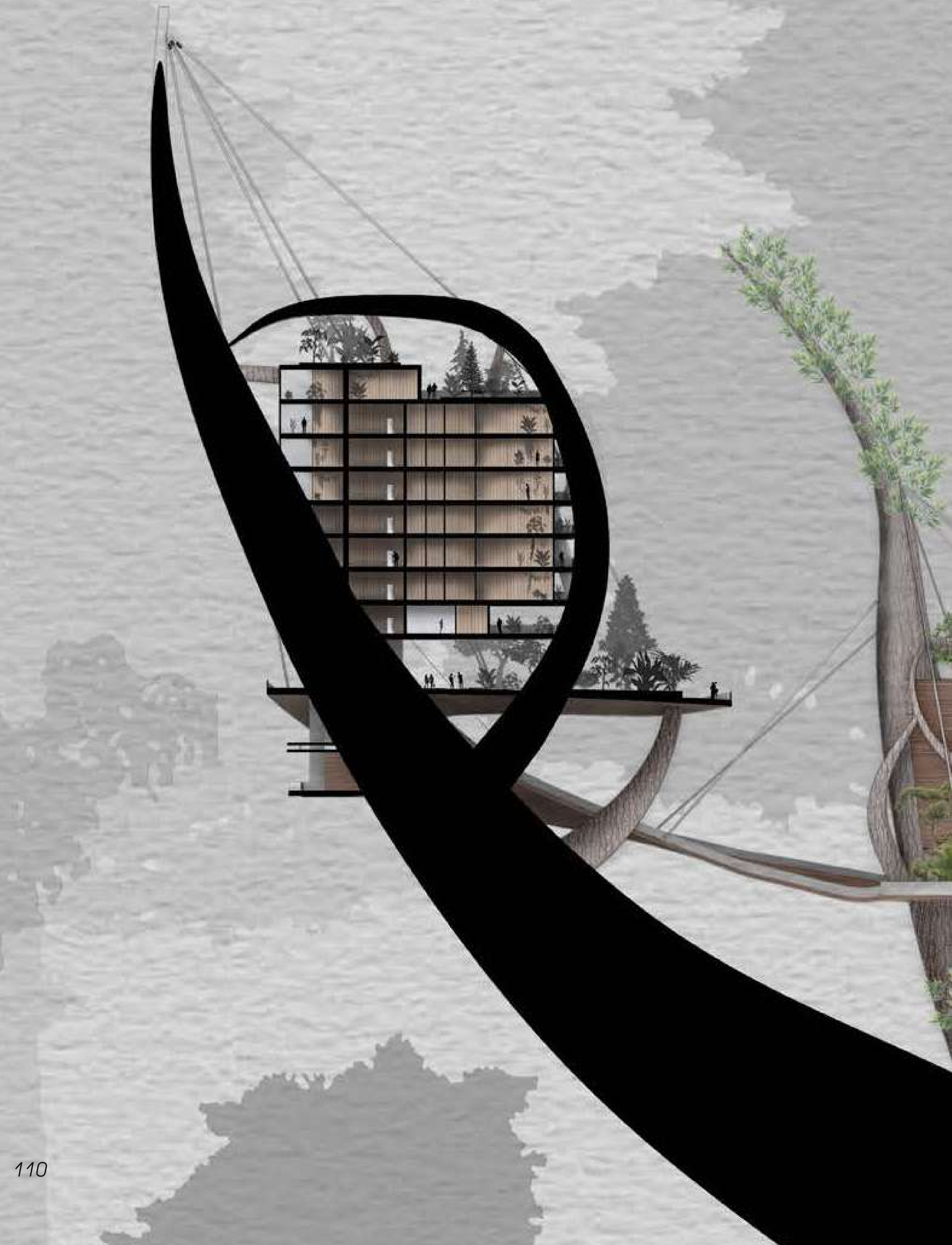


5.4. Views

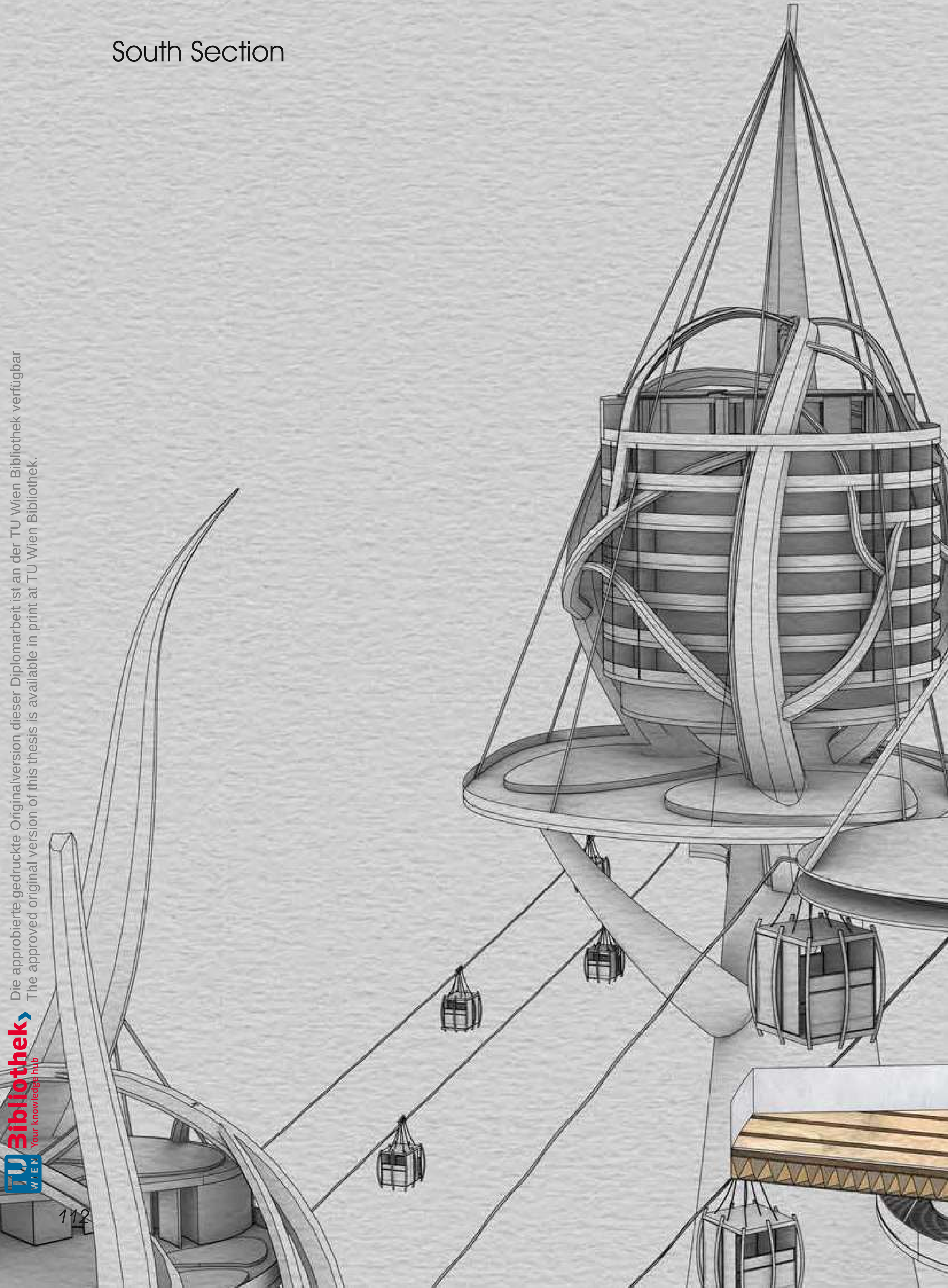
South View

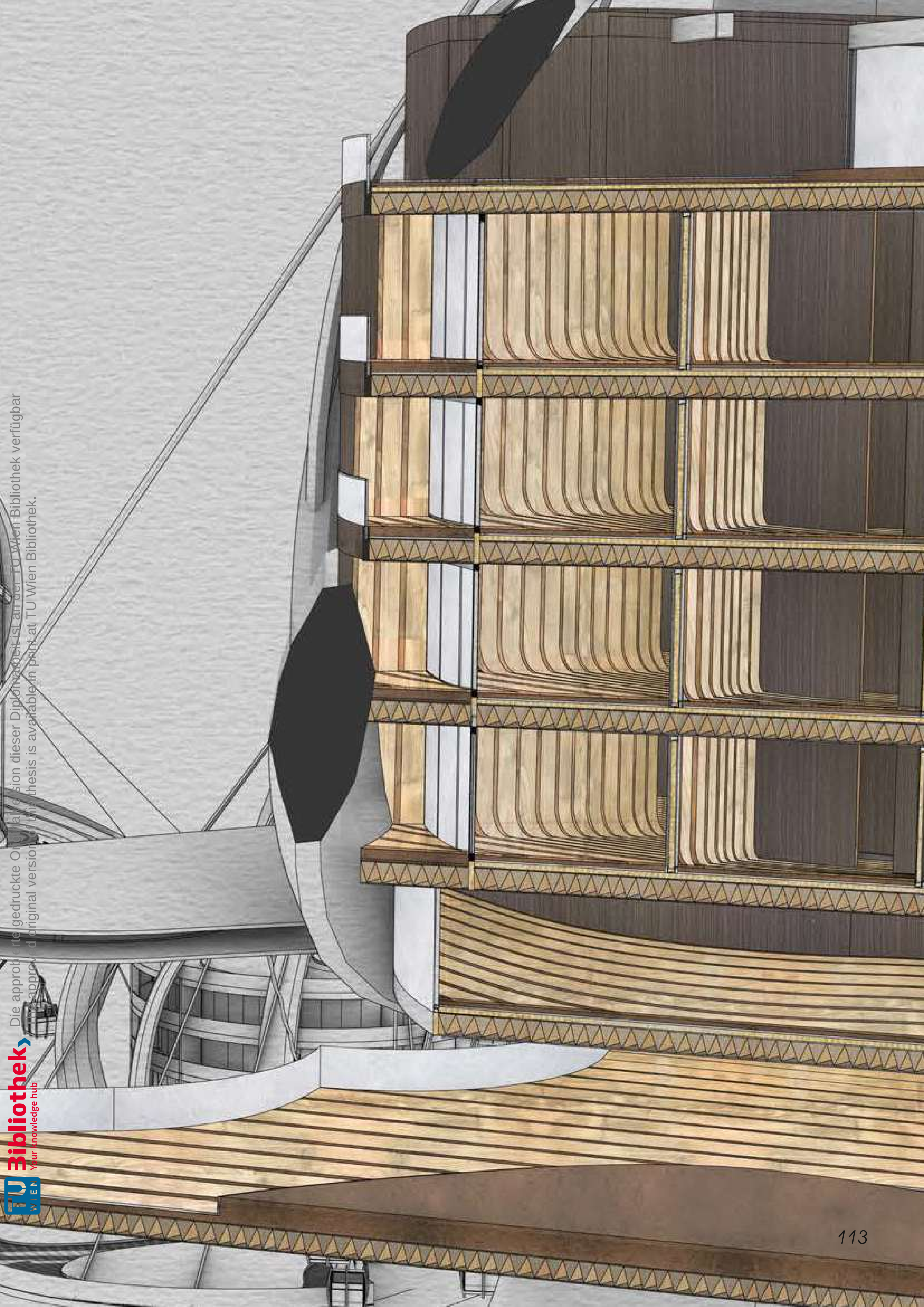
West View

5.5 Sections
West Section



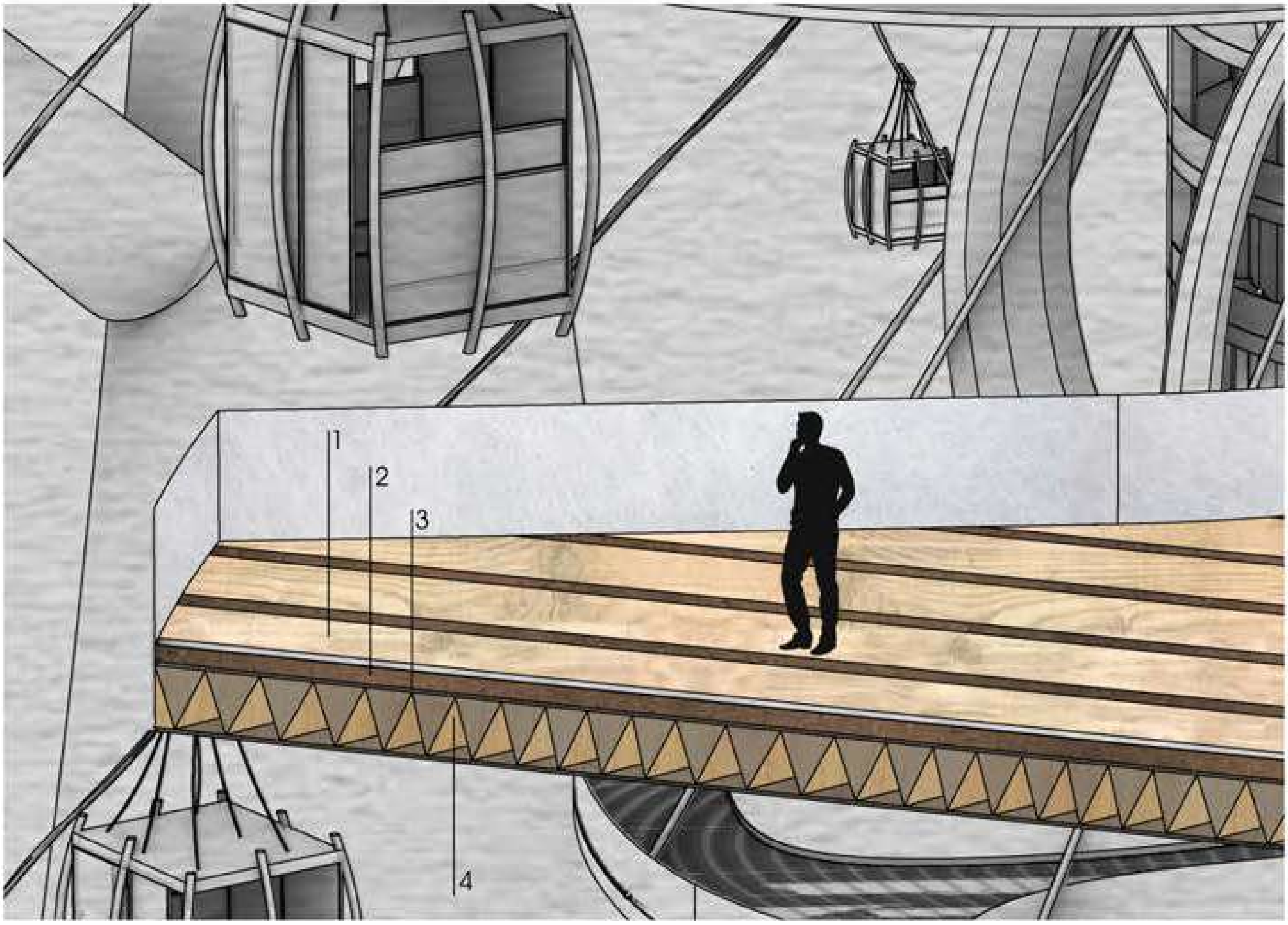
South Section





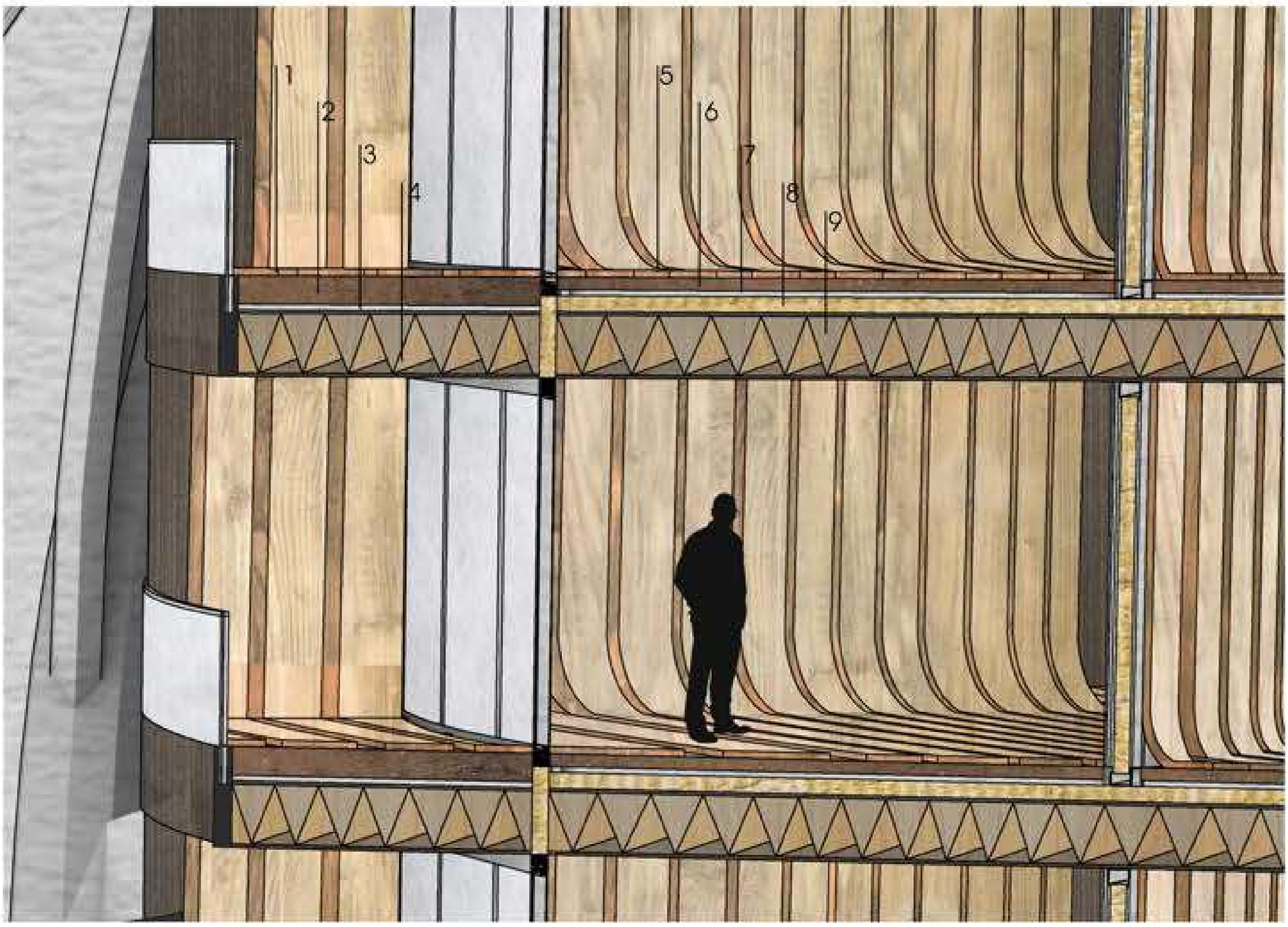
5.6 Details

1 - Floor covering
2 - Soil layer
3 - Drainage mat
4 - Keilsteg wooden ceiling



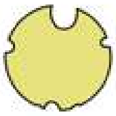
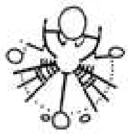
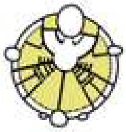
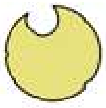
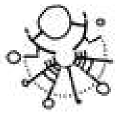
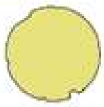
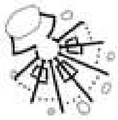
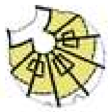
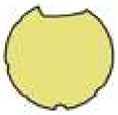
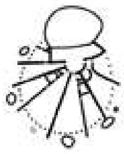
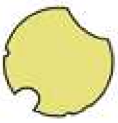
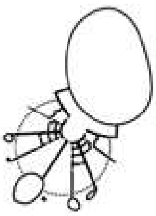
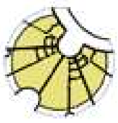
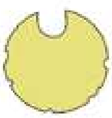
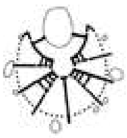
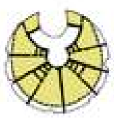
1 - Floor covering
2 - Soil layer
3 - Drainage mat
4 - Keilsteg wooden ceiling

5 - Floor covering
6 - Soil layer
7 - Drainage mat
8 - Screed
9 - Keilsteg wooden ceiling

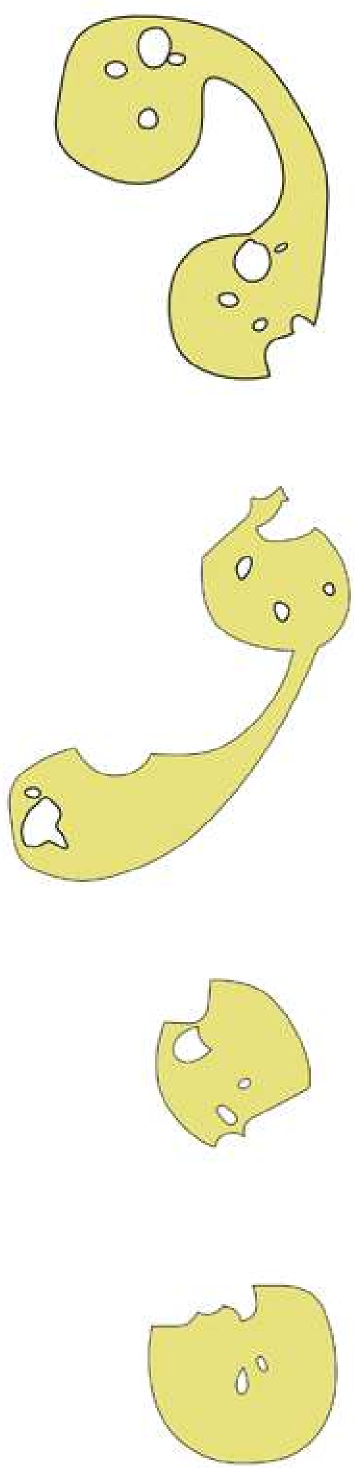


6. Evaluation

Based on the floor plans shown in the "Result" chapter, an approximate area evaluation is carried out. As a result, the gross floor area (GFA) was calculated, which divides to Construction Floor area, Usable area, Circulation area and Open spaces. I've calculated the areas on each building separately, multiplying the number to a number of floors on that unit, and then gathering them all together. This enables us to see the areas ratio and compare the relations to one another.

	GFA Gross Floor Area		Construction Floor Area		Usable Area	
Unit 1		100% 692,37 m² x 8 floors = **5538,96 m²**		7,13% 49,36 m² x 8 floors = **394,88 m²**		70,12% 485,48 m² x 8 floors = **3883,84 m²**
Unit 2		100% 545,32 m² x 5 floors = **2726,60 m²**		7,29% 39,75 m² x 5 floors = **198,75 m²**		71,54% 390,12 m² x 5 floors = **1950,60 m²**
Unit 3		100% 693,97 m² x 5 floors = **3469,85 m²**		8,10% 56,21 m² x 5 floors = **281,05 m²**		72,32% 501,87 m² x 5 floors = **2509,35 m²**
Unit 4		100% 739,58 m² x 5 floors = **3697,90 m²**		6,17% 45,63 m² x 5 floors = **228,15 m²**		72,88% 539,00 m² x 5 floors = **2695,00 m²**
Unit 5		100% 732,34 m² x 6 floors = **4394,04 m²**		6,47% 47,38 m² x 6 floors = **284,28 m²**		70,19% 514,02 m² x 6 floors = **3084,12 m²**
Unit 6		100% 668,37 m² x 6 floors = **4010,22 m²**		6,65% 44,44 m² x 6 floors = **266,64 m²**		70,82% 473,33 m² x 6 floors = **2839,98 m²**
Sum		***23837,57 m²***		***1653,75 m²***		***16962,89 m²***

Circulation Area	Open spaces	GFA Gross Floor Area Ground Floor Open spaces
12,08% 83,63 m² x 8 floors = **669,04 m²**	10,67% 73,87 m² x 8 floors = **590,96 m²**	***3910,65 m²***
11,03% 60,14 m² x 5 floors = **300,70 m²**	10,14% 55,29 m² x 5 floors = **276,45 m²**	
12,05% 83,62 m² x 5 floors = **418,10 m²**	7,13% 49,48 m² x 5 floors = **247,40 m²**	
9,96% 73,66 m² x 5 floors = **368,30 m²**	10,99% 81,27 m² x 5 floors = **406,35 m²**	**3298,47 m²**
12,57% 92,05 m² x 6 floors = **552,30 m²**	10,77% 78,87 m² x 6 floors = **473,22 m²**	**1366,10 m²**
11,45% 76,52 m² x 6 floors = **459,12 m²**	11,08% 74,05 m² x 6 floors = **444,30 m²**	**2207,24 m²**
2467,56 m²	***2438,68 m²***	***10782,46 m²*** ***+23837,57 m²***



34620,03 m² GFA

7. Conclusion

This Project challenges the conventional idea about modern life in todays society, how we live in the cities and what else beyond the regular can be available. It presents an idea of people and nature thriving together and living dependent on each other. The goal is to break the traditional pattern of thinking and remind people to explore their imagination more and let new ideas come through, because exploring these wild ideas is the only way we can create a better future. It is clear that the world is changing day by day, and the way we live today won't necessarily be the way we will live tomorrow. Things that we see as impossible today might become possible in the near future. So maybe we should start defining the way we will live differently, a way that the whole planet can benefit from.

With bringing nature into our homes, we can allow the planet to heal faster, we can start changing our impact to the planet as spices to a more positive one. Maybe we need to make ourselves directly dependent by nature again, so we can start giving it the attention it deserves. Maybe we need to start growing our own food again, and stop relying on outside sources that much, because we tend to forget where it all really comes from. What could be a better way of caring more about our planet then literally connecting with it again? We need to remember where we came from, before we destroy what is left of it.

I am sure that we can change our traditional ways of living and put our focus more on the environment, but in order for that to happen, something in the system of the society has to change. I believe that projects and ideas about utopian places like this are important in a way that it could help us plan our future better. If we imagine what the perfect life would look like, we can direct our progress in that direction. With the extremely fast development of technology and innovations in our world, we could be in a totally different situation in a few decades from now. The world is changing fast, and I believe now is the time where we decide in which direction we as species will develop, and turning to nature and bringing it back to our lives could be crucial for our and our world's survival.

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